THE

LARYNGOSCOPE.

VOL. XII. ST. LOUIS, MO., SEPTEMBER, 1902. No. 9.

ORIGINAL COMMUNICATIONS.

(Original communications are received with the understanding that they are contributed exclusively to THE LARYNGOSCOPE.)

CHRONIC SUPPURATIVE OTITIS MEDIA. WHEN SHOULD RADICAL SURGERY BE EMPLOYED IN ITS TREATMENT, AND OF WHAT SHOULD THIS CONSIST?*

BY GEORGE L. RICHARDS, M.D., FALL RIVER, MASS.

Otologist and Laryngologist to the Fall River Union Hospital; Fellow of the American Otological Society; Fellow of the American Laryngological, Rhinological and Otological Society, etc.

Wrote William MacEwen[1] years ago: "Chronic otorrhea is much too lightly regarded and is frequently considered as a mere inconvenience, instead of a menace to life. The disease progresses insidiously, and one cannot be certain as to when and where it may end. It is true that many affected with chronic purulent otitis media pass through a long life without suffering obtrusively from it and may die from causes neither directly or indirectly associated with it. On the other hand, the disease is one which advances insidiously, often without pain, until very extensive destruction of the middle ear and mastoid antrum and cells, with thinning of their osseous walls, and serious invasion of the meninges, the blood vessels and the brain itself, occurs.

"As long as the middle ear and its recesses are the seat of pus secretion, they are liable to become a focus for pathogenic organisms, which may find their way into the general circulation, or by extension invade the meninges and brain. The records of most aural hospitals show that their patients are all confined to the earlier decades of life. Under these circumstances all persistent,

*Read before the New York Academy of Medicine, Section on Otology, April 10th, 1902; also presented before the American Laryngological, Rhinological and Otological Society at its annual meeting in Washington, June, 1902.

purulent discharges from the middle ear ought to be regarded seriously, and the medical attendant ought not to rest satisfied until the discharge is cured."

These discouraging chronic cases of suppurative otitis media are in every clinic; they are among the patients in every man's private practice. The embryo otological specialist begins his studies by wiping them out—he will still be wiping them out to the end of his otological career. Why are they so common? Why are they not cured before they reach the suppurative stage? I think it is because, in spite of all that has been written and spoken in recent years concerning this subject, the general practitioner does not yet fully appreciate the danger to the organism which resides in the purulent diseased conditions of the ear. When the profession and the community as a whole begin to realize that, as Bayard Holmes has stated, mastoid antrum disease is the appendicitis of the head, and that every case of chronic suppurative otitis media is a slumbering volcano or a charge of dynamite liable to explode at any time—then, and not till then, will the suppurative diseases of the ear be treated with a full appreciation of their possible gravity.

That the serious sequelae of ear disease, such as general pyosepticemia, cerebral and cerebellar abscess, and the affections of the sinus and jugular follow these chronic, usually little-regarded suppurative diseases, it is needless to argue before this society. I have recently looked up the records of sixty-four cases of serious brain complications or sinus phlebitis, mostly cases of cerebral or cerebellar abscess.[2] Of these, 53, or 82 per cent, were caused by old otitis media purulenta, usually of many years' duration, and occurring for the most part in young people; while 11, or 18 per cent, followed cases of acute otitis media suppurativa. Hammerschlag,[3] in 187 cases of brain abscess, gives 149 cases as proceeding from chronic otitis media purulenta; 37 from acute otitis media purulenta, and one from subacute; giving a percentage of 25.3 from acute and 75 from chronic causes. Grunert[4] has stated that 91 per cent of the brain abscess cases are sequalae of chronic otitis; and has also reported from Schwartze's clinic 38 cases of the serious sequelae of suppurative otitis, of which 29 were chronic cases and 9 acute. If the mean of these sets be taken it will be found that about 80 per cent of all the reported cases of serious brain or sinus trouble are the result of chronic purulent otitis.

What proportion of these cases occur in any one man's practice?

And what is the probable liability of serious brain trouble in the individual case? I have no exact statistics covering this point, but considering the number of these cases which come and go in every clinic and in every physician's private practice, I am inclined to think that it is comparatively small. Stetter, of Königsberg,[5] reports 3,450 cases of purulent ear affections, 1,085 of whom suffered from acute purulent otitis, and 2,365 from chronic purulent otitis. On these he did 192 operations, 130 being the Wilde incision, which can be disregarded as an operation of any account; in 40 he opened the mastoid antrum, and in 22 he did the radical operation for purulent otitis. He does not state in his report for what purpose he did the radical operation, or whether any of these cases had dangerous sequelae, such as brain abscess or sinus trouble. In 9,000 autopsies at Guy's Hospital in London, 57 cases, or two-thirds of one per cent, died of intracranial complications from ear disease. Gruber found 232 cases of death from the same cause in 40,000 autopsies, about one-half of one per cent.

I am inclined to think that each man's individual experience is that, relatively to the number of cases of ear disease seen, serious complications are comparatively rare, either because the uncured cases—for I am sure that a large proportion, if not most of the chronic cases, remain uncured, i. e., are not permanently cured—have died of some other affection, or else when the serious complication has occurred it has been wrongly diagnosed. In my own experience I recall four cases in which death resulted from the serious complications of chronic suppurative otitis—one of brain abscess reported elsewhere; one of cerebral and cerebellar abscess in a child of four and a half years, following three years of chronic suppurative otitis; one of pyemia four months after radical operation too long delayed; and one of probable brain abscess following otitis media suppurative chronica accompanied by hemorrhage from the ear and hemiplegia.

What then is our duty in connection with these cases? Because dangerous complications occur but seldom, shall we hesitate and fail to put before each individual case the possible dangers confronting him? Shall we be content to syringe and swab, to try this powder and that powder and this remedy and that remedy, knowing full well that the individual is constantly carrying a small charge of dynamite around in his head? The question is one not always easy to decide. Nearly every case improves under treatment and many dry up for a time, but they are almost sure to start up again sometime or other.

So I think it is every aurist's duty after a reasonable length of time —which reasonable length must be very elastic and must depend upon the circumstances in each individual case, not being stated in terms of days or weeks—to put before his patient the question of a radical operation; stating the possible dangers incident to a suppurating ear, and explaining that although no serious complication may result, the danger of the same is always present, and when it comes there may be no warning, as was well illustrated in a case of brain abscess of my own, in which development of the abscess occurred without any premonitory symptoms; and, furthermore, that there is always absorption and more or less favorable influence upon the bodily organism from the presence of any suppurating cavity.

The question of the influence of operative measures upon the hearing power is not very much of a factor in these cases; since the danger to the individual is more to be considered than any possible influence which the operation may have upon the hearing power. It is usually benefited by any operative procedure, since material which is a hindrance to the passage of sound waves is removed by the operation, but it may now and then be diminished.

I am well aware that to urge any kind of an operation on a person who is suffering neither pain nor headache, and having only a chronic discharge from the ear, concerning which we are frequently told by the patient that it is only occasionally troublesome, requires some courage, as the individual is apparently suffering but slight discomfort. Nevertheless I think we ought to do so, even though I must confess that up to the present time I have not had the moral courage to invariably urge it upon my own patients. On the contrary, I fear that I have been in the habit of easing my own conscience and the minds of my patients by telling them, after accomplishing an apparent cure, that the condition may never trouble them again, but to return to me at the very first sign of trouble in the ear. An operation is always regarded by the laity with great dread, and the question of loss of time, the fear of the result, and the cost, are factors which always have a powerful influence. The question is easy of decision in the presence of manifestly serious symptoms, as pain or fever, but when proposed as a preventive of a possibly serious condition, the chances of its rejection are much greater. The time is coming, however, when we are going to urge upon all of these cases the need and desirability of a thorough cure; and I refer now quite as much to the cases in which there are no apparently serious symptoms, but simply a more

or less constant discharge of a small quantity of foul or slightly foul pus, in which examination of the ear shows one or more perforations, with only remnants of the malleus and anvil or perhaps their entire absence, and in which there is the probability of the invasion of the mastoid antrum or the presence of a cholesteatomatous condition.

The question of operation being before us, it resolves itself to a choice between two methods: first, that of the clearing out of the contents of the tympanic cavity through the external canal, known as ossiculectomy; second, the so-called radical operation, with its various modifications. Before deciding upon any procedure it should be borne in mind that the difficulty of healing chronic middle-ear suppuration is due to incomplete drainage of the diseased parts and the consequently constant danger of farther and farther involvement of the deeper structures; hence the operation chosen should be one that allows of healing taking place from the bottom of the diseased cavity and provides for free drainage during the healing process.

The operation of ossiculectomy has the advantage that it can be done through the external canal, requires no external wound, has but a short period of deprivation of work, and can sometimes be done without an anesthetic, although if thoroughly done I consider general anesthesia always requisite. In a certain number of cases in which the purulent process seems to be confined to the attic and carious ossicles, the removal of the remnant of the drum, malleus and incus, with the curettement of as much of the attic and adjacent area as can be reached, seems to be followed by satisfactory results; and many aural specialists advise the doing of this operation before having recourse to anything more radical. In the several cases in which I have performed this operation it has been followed after a longer or shorter time by complete cessation of the discharge. Several of these cases I have been able to observe over a period of several years, and I think the results have been satisfactory.

R. Lake[6] has reported 50 cases of ossiculectomy, of which 42 were cured, three had temporary relapses, and the remaining eight patients disappeared before a cure was effected. Improvement in the hearing power was noted in 21 cases, in three of whom the hearing returned to normal. The average age was 22 years, and the average duration of the disease 13 years. He thinks that an uncomplicated otorrhea which has resisted all forms of treat-

ment for six months is a case for ossiculectomy, which is especially imperative when the perforation is situated in the attic or upper posterior segment of the drum-head. He says: "The indications for the operation are briefly as follows:

"1. Intractable disease of the attic with a perforation in Shrapnell's membrane, especially if accompanied by definite caries or deafness.

"2. Intractable disease with perforation in the posterior superior quadrant.

"3. Intractable disease with considerable destruction of the membrane in any other situation.

"4. Residual deafness, after suppuration, without nerve deafness.

"Any more serious condition becomes a case for the radical operation, but in the foregoing there is justification for attempting to avoid more serious measures."

Randall, of Philadelphia,[7] has recently stated that he has yet to see a single brilliant or even a real success from the employment of this operation.

Holmes, of Cincinnati,[8] says: "While it is true that removal of the ossicles facilitates the cure of diseased parts in the cavities, because permitting a more ready application of medicines, yet the thorough exposure and removal of all affected parts at once by surgical means, under strict aseptic precautions—as is practiced in other portions of the body under similar conditions—is far more scientific than to submit the patient to the tedious process of waiting for nature to cast off the necrosed tissue."

This operation of ossiculectomy has certain disadvantages in that the attic is not visible; the curettage, even when, as ought to be the case, the bony wall immediately above Shrapnell's membrane is removed, is mostly done in the dark; and one can never be sure that the disease is thoroughly eradicated, or whether when the operation is finished there is not a diseased tract leading into the mastoid antrum still left. The operation is also not wholly devoid of disagreeable consequences. One of my cases, in which the curetting was carefully done, was followed by a facial paralysis, which persisted for some months but finally disappeared. Disagreeable nausea and vertigo occasionally follow for a longer or shorter time. The time that the person has to remain away from work is from a week to ten days. Although my experience has been that a cure usually results, this is not always the case, and one cannot be sure that no further trouble will ever manifest

itself. One of my patients who was operated upon in a neighboring city by a perfectly competent aurist had a return of the discharge a few months after the operation, and this persisted for months in spite of every effort at cure; while one of my own cases had a slight, though not persistent discharge appear six months after operation and apparent cure.

Therefore, it seems to me that the operation of ossiculectomy ought to be chosen only in those cases in which in all probability the suppurative process is limited to the ossicles and their immediate vicinity, and in which cholesteatomatous masses are not present. The presence of the latter should always lead one to decide in favor of the radical operation. Even when ossiculectomy is indicated and advised, it should always be stated to the patient that it is an operation in which a cure is possible, but by no means sure, and that further operation of a more radical sort may be demanded —that it is done as a provisional measure in the hope that the other operation will not be necessary.

The observation of a large number of cases seen abroad last summer, together with my own very satisfactory experiences with the radical operation, has made me much more inclined to urge the patient to submit once for all to an operation which gives every hope of bringing about a permanent cure. After seeing the good results obtained in a large number of cases operated upon for the cure of chronic purulent otitis in the clinics of Urbantschitsh and Politzer—cases such as when I was formerly a student in Vienna they were accustomed to treat with the usual syringing, swabbing, etc., and of the same character that I myself had been in the habit of treating in a similar manner—I came home determined to urge upon my own patients suffering from chronic purulent otorrhea that they allow me to do the radical operation, and so bring about a permanent cure.

According to Koerner,[9] the radical operation is indicated as soon as the diagnosis of a chronic purulent middle-ear inflammation is positively made; and in cases in which the diagnosis of bone involvement is uncertain the operation is to be done as soon as there are symptoms of pus retention, or when there is hyperostosis in the canal, preventing a proper view of the deeper parts and the proper treatment of the purulent condition; whenever conditions are present that favor the origin of intracranial complications, such as signs of purulent inflammation in the labyrinth or facial canal; and always at the very first signs of intracranial complications of any

kind. He, however, qualifies these indications by saying that he knows of no case, and has never found any in the literature, in which a semi-mucopurulent inflammation in the antrum, without hindrance to the outflow of the pus discharge, has ever led to intracranial complications, a statement which may perhaps be open to question, or at least not in accord with the experience of many observers.

In 1893, Schwartze[10] wrote that the radical operation is indicated "as a prophylactic operation against fatal results developing from fetid middle-ear discharge without any visible inflammation of the mastoid, and without signs of pus retention (pain, fever) whenever, after a careful examination, it is proven that the seat of the purulent secretion is not limited to the tympanum." The experience of otologists for the last nine years has only confirmed the truth of this observation.

The radical operation consists in throwing the cavities of the middle ear, attic and antrum into one, with the removal so far as possible of all carious or diseased bone and the ossicles, provided there be any of the latter present, with the exception of the stapes.

The usual mastoid operation, commonly spoken of as Schwartze's, is not adapted for the condition under consideration. There are two methods of performing the radical operation. The first is that of Stacke, which consists, after making the posterior incision as for the usual mastoid operation, in drawing forward the membranous external canal, and chiselling backwards at the posterior superior angle of the bony canal down into the attic and thence into the antrum, cutting away the external attic wall, so that when the operation is finally finished a probe could be passed from the roof of the tympanum directly out without encountering any sharp ridge, leaving a perfectly smooth single cavity.

The other operation is that of Zaufall, sometimes called Schwartze-Stacke, as it is a combination of the two. This is more easily performed, and seems to be preferred by most operators, although Randall states that he much prefers the procedure of Stacke as originally described to that of any of its modifications. Briefly, the operation of Zaufall consists in finding the mastoid antrum in the usual way, cutting away the entire posterior bony canal down to the hard bone through which the facial nerve passes (the Fallopian canal), and then clearing out the cavity after the method of Stacke. This operation has the advantage that it furn-

ishes room in which to operate, allows one to determine better the character of the mastoid bone and to remove as much of it as may be necessary, gives a better point of vantage in case it becomes necessary to lay bare the lateral sinus wall or to remove the tegmen tympani, and allows one to make a more satisfactory plastic than the method of Stacke; and this is the operation I have myself performed in all of my cases.

Without going into the details of the operation, certain points in connection with it are to be mentioned. A good light is necessary, preferably a forehead electric light, the rays of which can be thrown down into the cavity. The mastoid bone in most of these cases is usually sclerosed and very hard. The lateral sinus is frequently much closer to the external canal than in the average; hence in chiselling toward the antrum one should keep pretty close to the line of the external canal, enlarging the upper part of the funnel as one proceeds downwards. As soon as the antrum is reached a protector is carried into the attic, and the remnant of the external canal cut away with the protector in position. This is necessary to avoid wounding the facial nerve and the semi-circular canals. The anterior wall of the attic is entirely cut away, and all sharp corners rounded off. It has not been my practice to cut away all of the mastoid cells, or indeed to go beyond this area, except when there is manifest indication for so doing, and this should, I think, be the guiding rule as to how extensive an operation we shall do in the mastoid in these cases.

When the cavities have all been thrown into one, all surfaces and ridges are made perfectly smooth, so as to favor rapid epidermization. The condition of the walls of the tympanic cavity can then be determined, the ossicles and the remnant of the drum removed, and the surface curetted as may seem best. In connection with the curettement it must be remembered that the bony covering of the facial nerve may be absent in places, and that all curetting should be away from rather than towards it, and should also be away from the region of the stapes. The relation of the tympanic cavity to the jugular bulb and the carotid artery should also be borne in mind.

The danger of injury to the facial nerve is not entirely theoretical. In one case with acute symptoms following an old purulent otitis, slight facial paralysis followed, which, however, gradually passed away. Facial paralysis in a case in which one has operated purely

for the relief of chronic suppuration is an accident to be avoided rather than invited, even though it does subsequently get well.

The entrance of the Eustachian tube should be thoroughly curetted, as I had considerable annoyance in the after-treatment of one of my cases from the formation of granulation around the entrance of the Eustachian tube, which trouble was almost entirely remedied in succeeding cases, in which I took particular pains to thoroughly curette the tympanic opening of the Eustachian tube.

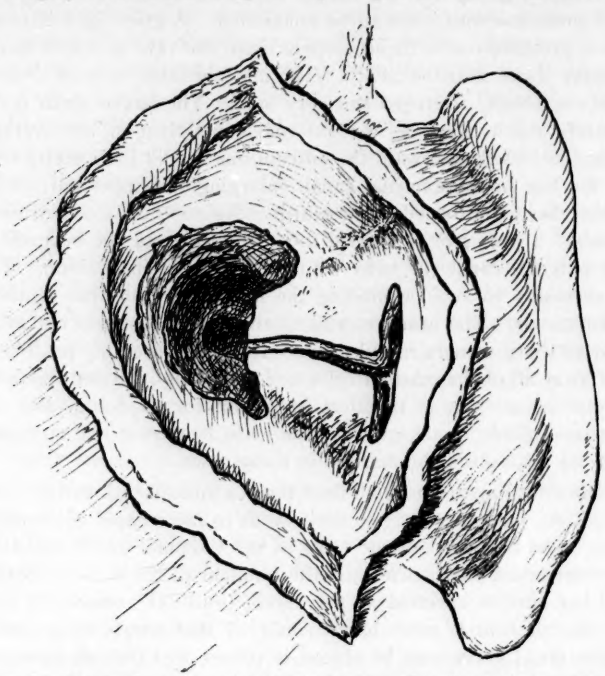

Figure 1. Radical operation finished and incisions made in the posterior canal for the plastic after the manner of Panse. Slightly altered from Politzer's 4th edit.

The operation being completed, the question of the plastic which is to follow and the care of the external wound become of importance. There are two principal varieties of plastic, each of which can be varied to suit the needs of the individual case. The first is that of Panse, in which the posterior membranous canal is divided medially, and then a cross cut made at right angles at the entrance of the external canal. (Fig. 1.) The two free corners

are then stitched to the upper and lower external angle of the original wound. (Fig. 2.) After trimming the flaps so that they will lie back nicely without superabundant tissue, the external wound is closed, with the exception of perhaps the lower point, where some gauze is inserted for a few days for drainage, while the

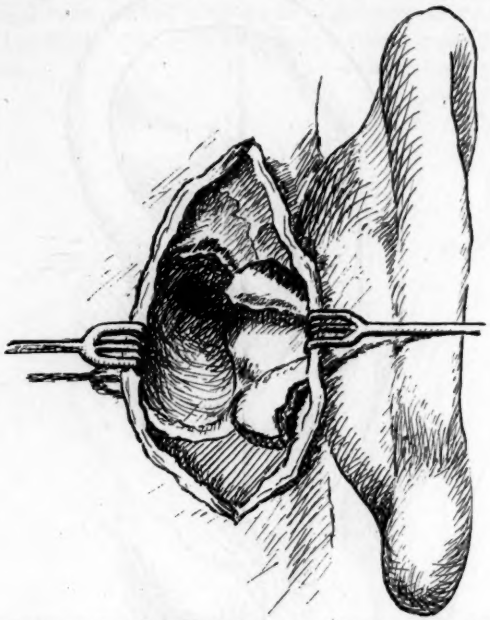

Figure 2. Edges of the flap stitched to the upper and lower angles of the external wound, and the whole ready for closing. Method of Panse. Slightly altered from Politzer's 4th edition.

external canal is lightly packed with gauze. This plastic has the advantage that it gives access to the entire area operated upon. Subsequently, new epidermis grows from the two edges and covers over the area of bare bone. Should there be any further trouble, ready access to the diseased part is obtained through the external canal.

The other form of flap is that known as Koerner's, in which a tongue is made out of the posterior wall of the external canal by means of incisions as follows: The external ear is laid forwards, and the concha pierced from the highest point of the posterior margin of the entrance of the external canal to the point of bony

attachment of the auricle, and continued the whole length of the posterior membranous canal. A second incision parallel to the first is then made from the lowest point of the posterior margin of the external canal, and continued as before. (Fig. 3.) This

Figure 3. Incisions in the concha as made for the plastic after the manner of Koerner. Slightly altered from Politzer's 4th edition.

forms a tongue-like flap from eight to ten or twelve millimeters wide, and from twenty to thirty millimeters long. (Fig. 4.) Both of the incisions should be carried sufficiently into the concha so that the enlarged entrance to the canal will easily admit the fore-finger (and this applies also to the plastic of Panse), because if the entrance through the external canal is not made very large the final cicatricial contraction is such that sufficient room will not be allowed. I speak of this especially because in one instance I failed to make the cuts into the concha deep enough to afford a suffi-

cient amount of room for the after-treatment. This opening may be made just as large as one desires; since the antitragus effectually covers any slight deformity in the ear due to an enlarged opening. The tongue flap being formed, and any superfluous tissue trimmed away, the flap is laid back against the bare bone, and the external canal packed with gauze sufficiently firmly to hold the flap in position. The external wound is then completely closed by sutures.

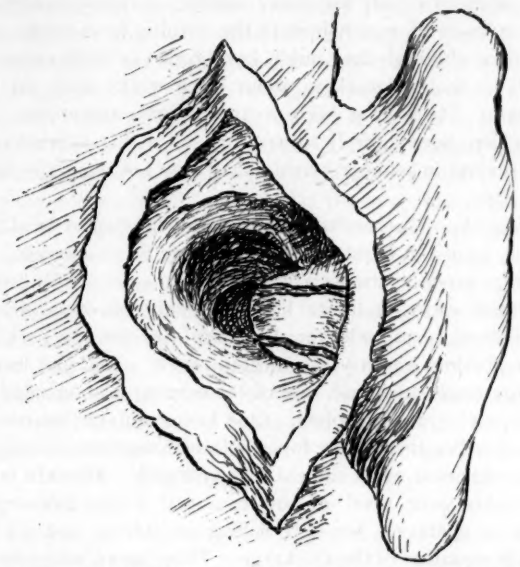

Figure 4. Operation completed, and incisions made in the posterior canal after the method of Koerner, showing the formation of tongue flap. Wound ready for closing. Slightly altered from Politzer's 4th edition.

The first dressing is made in from three to five days, although Koerner himself leaves his eight days. I have not been able to see any special advantage in leaving the first dressing in any longer than is necessary to allow the flap to become securely fastened. By the time the first dressing is made the flap is firmly attached to the denuded bone; and there are four surfaces which permit of epidermization. This allows of more rapid healing than does the flap of Panse. This flap should be used only in cases in which one is absolutely certain that the bone against which the flap is placed is entirely sound; otherwise some point of diseased bone may be

inclosed behind the flap, and subsequently break down. In Panse's flap, the bone being covered on its edges only, a better chance is afforded for any subsequent casting off of portions of diseased bone that may have been left behind; hence, in any case of long-standing chronic mastoiditis for which a radical bone operation is done, or one in which we have found more extensive involvement than we had expected, and fear that some diseased bone may be left behind, the flap of Panse is to be recommended.

The after-treatment for either method is comparatively simple. My own cases have remained in the hospital from twelve days to two weeks, although they might have gone out earlier, and several have been back at work in about three weeks from the time of operation. There have been no troublesome symptoms; and the results have been entirely satisfactory, all of the patients operated upon, several in number, saying that they felt decidedly better in every way.

In regard to the results in the way of hearing, a brief analysis of some points in eight of my cases may be of interest. Six of them were private patients who complained solely of long-standing suppurative otorrhea, there being no pain or other symptoms. Two of them I had endeavored to cure over varying periods during the previous seven years without result. Two had had a foul discharge since childhood, one of them being accompanied by the formation of granular polypi. One had slight cholesteatomatous discharge. Another had a foul cholesteatomatous discharge with extreme dizziness when the ear was syringed. All were in young people who were tired of the continual aural discharge. All dreaded an operation, but were willing to undergo one if it offered a hope of cessation of the discharge. These cases, with one exception to be noted, were finally cured over periods ranging from five or six weeks to something like three months, and without any external scar other than the line of the original incision. The hearing power has either remained the same or been improved in every case. In one case, ability to hear the whispered voice was raised from one foot to six feet; spoken voice from eight feet to thirty, and watch from three-quarters of an inch to about twelve inches. Another patient reports her hearing power improved, while she feels better than for years.

The eighth case was that of a boy who had suffered from a chronic discharge from each ear for several years, with diffuse mastoiditis on the left side. On this side I had operated on three

different occasions after the typical Schwartze method, removing all of the mastoid bone until but little of it remained, but still after each operation the purulent discharge from the ear continued, until finally I did the radical operation of removing the entire posterior bony canal, when the discharge ceased entirely after several weeks of after-treatment. At the same time I performed the radical operation on the other ear, which had been suppurating for several years, and in which curettage at the time of the previous operations on the left ear had failed of result. The after-treatment in the right ear has been somewhat tedious, and as there is still a slight discharge, it may be necessary to curette a portion of the bone through the canal before complete healing will take place. The general conditions in this case are not all that could be desired. This was a case in which the plastic after the manner of Panse was indicated, and in which Koerner's plastic was contraindicated; since, owing to the softened condition of the bone, it was absolutely impossible to be sure that all the disease had been removed.

In another case of acute mastoiditis supervening on an old otorrhea, after cutting away all of the posterior bony canal and completely cleaning out the antrum, the bone being very hard everywhere, a plastic after the Koerner method was made, with immediate fastening down of the flap and rapid healing.

Although the after-treatment of these cases may be expected to last anywhere from six weeks to six months, it is very simple, consisting in the removal of such granulations as may form and the insertion of sterile gauze tampons to take care of whatever secretion there may be. It does not interfere with the person's work, and when done at the physician's office requires but a few moments.

That no recurrence of trouble will ever take place no one can surely state, since a part once diseased is liable to subsequent trouble.

Jakins has reported in the Lancet of July 10th, 1900, 80 successive cases of radical operation done for the most part because of positive signs, such as pain, vertigo, recurrent polypi, mastoid swelling, cholesteatoma and necrosed bone in which the finding justified the operation. There were several cases with complications, such as septic phlebitis of the lateral sinus and jugular vein, extradural abscess, cerebral and cerebellar abscess. The results were uniformly successful, with the exception of three patients whose condition was beyond hope on admission. All of these seem to

have been cases in which there could be no question concerning the advisability of operation, rather than cases in which operation was done to prevent possible dangerous sequelae.

C. R. Holmes has reported a number of cases done absolutely for chronic discharge, in which the results were very satisfactory.

In spite of the fact that many otologists still believe in the palliative treatment of chronic suppurative otitis, and although Koerner states that he saw brain symptoms occur only twice in 2,207 patients, and that he does not fear the threatening symptoms to such a degree as to acknowledge the Stacke radical operation to be a prophylactic measure, and notwithstanding the fact that cases in which the indications for the radical operation as stated by Stacke are sometimes cured without operation—I nevertheless believe—in view of my own experience both abroad and at home, and in view of the many reported cases of serious brain and sinus trouble that are constantly being brought to our attention in otological and general medical literature—that it is our duty, in all cases of suppurative otitis media that are not cured after a reasonable length of time, to urge upon the patient the need of more radical surgery for the removal of the entire diseased area, and the production so far as possible of a positive cure.

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CONSTITUTIONAL MANIFESTATIONS DUE TO INFECTIOUS PROCESSES OF THE ADENOID STRUCTURE IN CHILDREN.*

BY D. BRADEN KYLE, M.D., PHILADELPHIA.

Usually the pharyngeal tonsil attracts the general practitioner or specialist's attention only when it is the site of some pathological process or from its physiological growth it becomes sufficiently large to obstruct nasal respiration and interfere with the development of the nasal and facial bones. To be sure, in the majority of instances any alteration in the gland is such as to demand surgical interference, but it has been my experience that we have certain constitutional symptoms brought about by alteration in this peculiar gland structure which should be classed as non-surgical and could be called medical adenoids. In order to clearly define these cases let us divide the subject into (1) Constitutional manifestations associated with enlargement of the adenoid structure even to such an extent as to demand surgical interference, and (2) Where the adenoid structure is very slight and in no way interfering with nasal respiration. When the latter condition exists there are no local symptoms to attract attention to this structure and it is liable to be overlooked by the clinician as a causal factor in disease. When the adenoid structure is enlarged there are usually sufficient local symptoms to attract attention to this structure.

The systemic phenomena associated with infection through this adenoid structure is practically the same whether the adenoid structure be of an obstructing nature or whether it is non-obstructive and the two can be considered together. But it is to the former that I wish especially to call attention. The physiology of this peculiar Luschka's or pharyngeal tonsil is still not well known. It is a conglomerate, racemose or rather mixed gland with a function —still yet in doubt. Of the many peculiarities of this gland structure, probably the most marked are its tendency to fluid infiltration, filling up very much the same as would a large lymphatic space; its being affected by vascular changes very rapidly, and the tendency to enlargement when the patient is suffering from any sys-

*Read before the American Laryngological, Rhinological and Otological Society, Washington, D. C., June 2d, 1902.

temic disease. Also when the patient, usually a child, is in the recumbent position and the circulation slowed, the stricture becomes more edematous and interferes with respiration causing night mouth-breathing. There is also a peculiar relation to the mentality of the child suffering from enlargement of this gland. Drs. Harrison Allen and J. Solis Cohen were the first, I believe, to call attention to the intimate relation of this gland structure to the brain and its meninges. However, that may be explained, one thing is certain that this peculiar gland structure is particularly susceptible to inflammatory actions and that the slightest inflammatory change in this structure will produce in children, although the same is practically true in adults, marked rise in temperature with all the associated febrile phenomena. This is particularly true in children, and I am led to believe, from my own observations and from statements made to me by general practitioners, that frequently we have to deal with febrile conditions in children in which there is no apparent cause for the symptoms present and that the cause of such temperature, with the accompanying systemic phenomena, could be traced directly to the inflammatory condition of this adenoid structure. I have noticed that in any case in which there is the slightest infection, with inflammatory condition of the adenoid structure, the systemic phenomena are all out of proportion to the local cause; that the gland seems to rapidly absorb any toxic material and that the temperature suddenly rises before there is any very marked constitutional effect. Children with this adenoid structure are more susceptible to cold and disease of childhood than those who do not have it and the symptoms produced by the cold are aggravated in proportion to the amount of gland structure present. In all the infectious processes of childhood it is a well known clinical fact that the prognosis is more grave and that the symptoms common to that particular infection are more aggravated and of a more severe type than in cases in which this gland structure is absent or very slight. I have made this observation in a number of cases of scarlet fever and diphtheria, and in each instance it has proven correct. This, however, is a fairly well established fact and it is particularly to what might be called the more minor infections of his gland to which I particularly wish to call attention Owing to the peculiar character of this gland I believe that its surface furnishes a very suitable nidus for the lodgment of infectious material and while the nasal and pharyngeal mucous membrane might be in a fairly normal condition, it is quite

possible to have slight inflammation due to a local infection involving and largely limited to, the pharyngeal tonsil. The products of such infection and inflammation are rapidly absorbed into the system and the febrile phenomena following are misleading, and usually there is nothing locally in the throat to call attention to that point. To be sure, inflammatory change may be brought about in this gland structure, which change is secondary to some systemic condition, even the infection may be secondary to some systemic condition, but I do believe there are cases in which the condition described above actually takes place, and they are the cases which are often put down as of a febrile condition due to some remote cause. It is now my regular practice to examine the nasopharynx when there is any question as to the cause of the rise in temperature, making it a rule and part of the routine examination. One of the best proofs that absorption of infectious material through this inflamed gland is the cause, either direct or associated, of the febrile condition so often seen in children, is the fact that when remedial agents are applied for the relief of this inflammation, and the prevention of infection or the removal of the gland structure even though it be non-obstructive, the tendency on the part of the child to rapid and recurring febrile attacks is relieved. That leads us to the belief that in some cases in which there is present only a small amount of pharyngeal tonsil, not sufficient of the gland to cause any obstruction to breathing, that such cases, owing to the fact of its tendency to infection, become just as truly surgical cases as those in which there is marked obstruction. True they become surgical from an entirely different standpoint than the obstructive variety, but if absorption is taking place through this gland and if it is frequently the site of an infectious inflammation the gland structure should be removed, obstruction or no obstruction.

After the removal of the adenoid structure it has been my experience that I have very slight if any rise in temperature and after removal of the structure even should there be some slight infection there is not the rapid systemic phenomena which are observed where the gland structure is still present. It would seem that the gland itself seems to be capable of taking up rapidly materials which come in contact with the surface or materials which are manufactured within the gland structure owing to inflammatory or pathological processes.

In this paper I especially want to call attention to the adenoid structure in quite young children. Frequently we have febrile attacks in children in which the physician is called in and he finds

the little patient with irregular temperature, restless, probably some symptoms of cold, but no well defined condition. The breath is heavy, there may or may not be nasal discharge, temperature ranging from 100° to 102° or 103.° This temperature seems to go higher when the child is kept in bed. The cervical and submaxillary glands are enlarged. There may be some slight throat cough, in fact the symptoms are so general that frequently the physician is led to believe that some serious disease is developing and he probably suspects typhoid fever or beginning pneumonia. There is often associated as a symptom the chilly sensation, probably not amounting to a complete chill, but which may also lead the physician to suspect malarial infection. The case is then watched for developments and treated in a general way, giving purgatives and diuretics. The febrile condition will last probably from two to four or five days, coming on rather suddenly and gradually disappearing. When recovery has taken place the cause is usually assigned to some gastric or intestinal disorder and the child goes on to complete recovery.

My own experience has been that these attacks occur in children at irregular intervals. I have seen cases in consultation in which there has been repeated attacks. My object in writing this paper was to call attention to this particular class of cases and my observations lead me to believe that the adenoid structure, although only present in a small amount is responsible in a great many cases for the symptoms described above, which frequently occur in children. If the nasopharynx is examined either by inspection through the nose or rhinoscopic or digital examination, this gland structure will show decided inflammatory change. The symptoms of cold in the head which are misleading to the physician and which are out of proportion to the nasal discharge are due to the fact that the obstruction is caused by the inflammatory enlargement of the adenoid structure and while the anterior nares may be fairly free, the adenoid structure obstructs the post-nasal space, giving all the symptoms of cold in the head.

The treatment of these cases is very simple. During the attack all the secretions should be stimulated and the excretory glands aided in their function so as to increase elimination. Warm boric acid solution, eight grains to the ounce, sprayed into the nostril and used as a gargle with the administration of small doses of calomel and soda, followed by a saline is usually all that is necessary. I believe that after the recovery the adenoid structure should be scraped out, even although there is not present any symptoms of nasal obstruction or tendency to mouth breathing, for in that individual the structure must be particularly susceptible to infection and I also believe that with the removal of this structure it would lessen the susceptibility of the child to certain of the infectious diseases of childhood.

1517 Walnut Street.

THE BEST MEANS OF REMOVING NASAL OBSTRUCTIONS, WITH REPORT OF 264 CASES.*

BY J. W. MURPHY, A.M., M.D., CINCINNATI, O.

Laryngologist and Aurist to the Cincinnati Hospital.

The subject to which I wish to direct your attention for a few moments will be simply the method which I have employed for the past few years in the reduction of nasal obstruction. I do not propose to enter into the symptomatology or pathology of this condition, but simply to bring before you my method of treating this class of cases. I do not claim for this method that it is better than some others, but simply as practiced at present it has given me better and more permanent results than any other method with which I am familiar.

The numerous methods that have been proposed from time to time for dealing with hypertrophied conditions in the nasal cavities is our best proof that no one method has proven entirely satisfactory. Each has adopted the method at which experience has proven him most adept, and hence of the many different procedures advanced, all have had their advocates.

The inter-dependence of local symptoms and general effects resulting from improper nasal respiration upon the health, development, and general well-being of the individual is being more fully recognized, even by the laity.

When a patient complains of a continuous or intermittent inability to breathe satisfactorily through the nose, in the great majority of cases the difficulty arises from an enlargement of the tissues constituting or covering either the middle or the inferior turbinated bodies. Not infrequently the obstruction arises from some other cause, as a deflected septum, or a spur, or nasal polypi, but it is chiefly the obstruction caused by hypertrophy of the turbinates, and their surgical treatment that I wish to direct your attention.

It is now generally accepted that the inspired air secures its necessary warmth and moisture by passing over the mucous mem-

*Read at the Seventh Annual Meeting of the Western Ophthalmologic and Oto-Laryngologic Association, Chicago, April 10, 11 and 12, 1902.

brane lining the upper portion of the nose, and that the expired air passes out along the inferior meatus. When these passages are obstructed it is useless to formulate any set rules as to how they should be treated, but each case must be studied separately, and

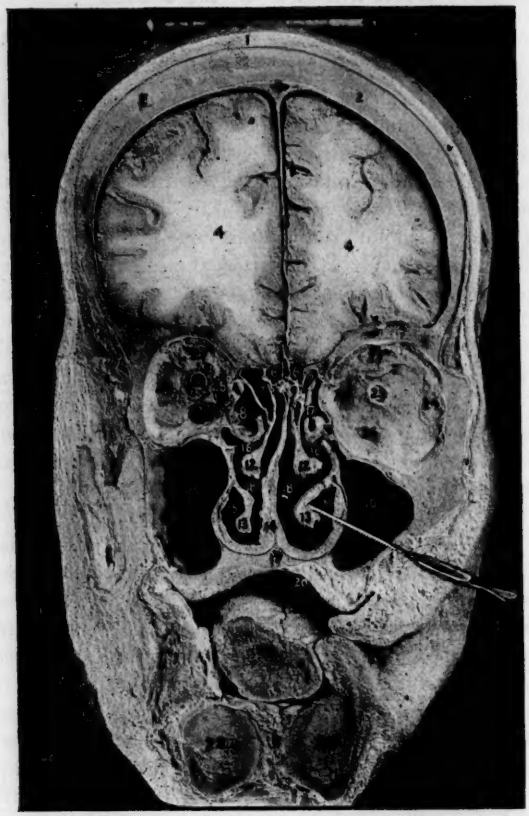


Fig. 1. Showing the proper position of the author's narrow saw so that only the lower edge of the turbinate bone will be included in the operation.

treated by that method which has been most successful in your hands.

The object of most nasal surgery is to increase the sum total of nasally inspired air, with as little destruction or injury as possible of the over-lying mucous membrane.

For a number of years the use of the galvano-cautery seemed best adapted for this purpose, but it has many objectionable features, and I now find myself resorting to the cautery less and less, each year, since more satisfactory and more permanent results can be secured by other means. My experience has been that more damage results to the mucous membrane from repeated cauterizing than results from a clean surgical operation along the under surface of the bone, where the glands are few and the hypertrophied tissue is most marked. This is especially true with the inferior turbinate, and it is next to impossible to properly cauterize the posterior end of this body, where the hypertrophy is most marked. The reaction resulting from the cautery and the danger of synechia following, together with the fact that these patients are prone to return in a year or two complaining of the same symptoms, have caused me to largely abandon the cautery treatment

Figure 2. Author's saw with straight set teeth.

The method of sub-mucous puncture, advocated before this society at its last meeting by Dr. M. A. Goldstein, I have tried in a number of cases during the past year. It seems well adapted to the beginning stage of hypertrophy, but sufficient time has not yet elapsed to judge of the permanency of the scar thus formed.

One objection I found to Dr. Goldstein's canula was that the opening was too small to allow the passage of a chromic acid bead of sufficient size to accomplish the desired results.

Applying the same principles to intra-nasal surgery that we apply to surgery of any other portion of the body, seems reasonable. A thoroughly aseptic operation within the nose is not possible, but the parts should be rendered as aseptic as douching with a warm saline solution can make them, since much of the success of the operation will depend upon this principle. With clean nasal surgery there is less destruction of the mucous membrane, since only the pendulous portion is removed, and for this purpose the saw and scissors have given me my best results.

It is of the utmost importance that these two instruments be of the right size and form. Most of the nasal saws on the market are too broad in the blade, and it is impossible to turn them after insertion, so as to cut at almost a right angle with the septum. The saw must have a firm handle, but very narrow, flexible blade.

The saw I have had constructed by Max Wocher & Sons (Fig. 2) has the blade 5 inches long and ⅛ inch wide, with straight set teeth, so as to cut on the forward and backward stroke. I make it a rule to have the saw sharpened after each operation, as there is as much difference between a sharp and a dull saw, as there is between a sharp and a dull razor.

Beckman's straight nasal scissors have proven very satisfactory for this operation, as they will cut out at the very tip, where most nasal scissors fail to cut.

Figure 3. Beckman's Nasal Scissors.

In order to avoid the tendency to spring apart at the tip, when cutting a hard substance, as the posterior edge of the turbinate bone, I have had constructed a pair of scissors in which only the anterior half of the two blades are cutting surface, since this is the only portion of the cutting surface which can be used in the nasal cavity. By this construction we get a strong and at the same time narrow blade.

With properly constructed instruments which are kept in first class order, the operation is quickly and easily done. I know there are many objections to this method of reducing nasal obstructions, but I feel that much of the objection arises from a misapprehension of the operation, or an attempt to do the operation with improper instruments, or a failure to select suitable cases.

It is not a removal of the turbinate bone, as the name turbinectomy would imply, but is rather a turbinotomy, in which only a small portion of the under edge of the bone is removed. I have never yet removed a turbinate body, unless it were the middle, for some definite purpose, as drainage, or to gain access to some of the accessory cavities.

The operation which I have practiced for several years, consists in a removal of the redundant tissue. That the scar resulting from this may be lasting, I always aim to remove a very small portion of the under edge of the bone. (See Fig. 1.) Often this sliver of bone is so small that it is scarcely perceptible, but the success of the operation consists in getting a linear scar, along the entire under edge of the turbinate body, since it is by means of this scar that the permanency of our opening is to be maintained, and the blood supply cut off, from the overlying connective tissue. During the past ten years I have had occasion to do this operation 264 times on 155 patients, and in about 2 per cent of my cases there

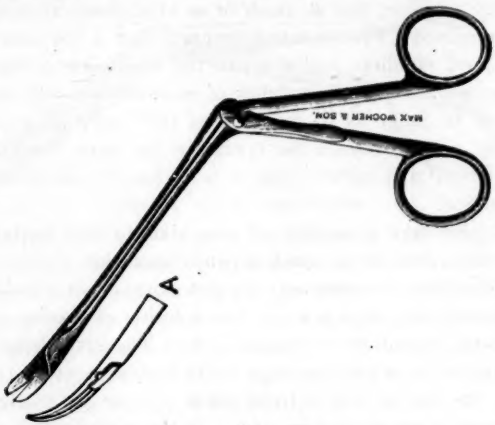


Figure 5. Holmes' Middle Turbinate Scissors.

has been a regeneration of tissue at the site of operation. Why it occurs in some cases, and not in others, I have never been able to discover. I have never yet operated the second time, but a few patients will need the secondary operation in order to secure the desired results. All of these cases where a secondary operation is indicated occurred during my early experience with this operation, and at that time I was hearing so much about hemorrhage and pharyngitis sicca following this operation, that I was inclined to be most too conservative in the amount of tissue removed. I am satisfied after considerable experience that both of these dangers are insignificant. I have never seen a case of pharyngitis sicca resulting from this operation either in my own practice or that of another. The secret of the whole operation consists in the removal of a

small sliver of bone, along with the redundant tissue. For this purpose the saw is far superior to the scissors, since there is no crushing of the bone, and the resulting scar is more permanent.

For the removal of the middle turbinate I find the scissors devised by Dr. C. R. Holmes (Fig. 5) admirably adapted for this purpose, and they have simplified operations in this region of the nose very much.

The advantages of operating with the saw and scissors, are that the technique is simple, the instruments required are few, and inexpensive, and no cauterizing outfit is necessary. Then, too, the parts operated upon are constantly under the eye and direct control of the surgeon, and as much or as little tissue as is necessary can be removed The operation requires but a few moments, is painless, and bloodless, and as a rule the results are permanent.

I have operated upon a number of medical men, who should be competent to judge as to results, and they have all experienced permanent relief. Indeed the operation has been so satisfactory both to myself and patients that it is seldom I now resort to any other method.

I shall only take a moment of your time to demonstrate a few steps of the technique; as much depends upon this.

After douching the nose with a warm normal salt solution, pledgets of cotton dipped in a 5 per cent solution of cocaine are carefully packed around the turbinated body. The first pledget is carried up under the scroll-like edge of the turbinate, (Fig. 1) as here is where the first incision is to be made. From six to eight pledgets of cotton are packed in. One of these pledgets I dip in a 1 to 3,000 adrenaline solution to control the hemorrhage. These are left in for ten minutes when they are removed, and the parts inspected again to decide how much tissue to remove. A fine, straight saw is passed along the floor of the nose, and brought up under the scroll-like edge of the turbinate. It is passed back till its blunt end infringes upon the posterior wall of the pharynx. It is now withdrawn about three-fourths of an inch, which gives you the length of your stroke, and is then turned so as to cut almost at a right angle with the septum. Half a dozen strokes with the saw and a thin sliver of bone is removed from the under surface of the turbinate. The author's nasal scissors (Fig. 4) are now passed in, the lower blade following the saw cut, and the hypertrophied membraneous portion is removed. Frequently upon inspection we find a small portion of the posterior end of the turbin-

ate has escaped both the saw and scissors. Under direct illumination a wire snare can be made to engage this portion and it is removed. It is very important to get this posterior end of the body, else it will swell again and our operation will not be complete. The nose is douched again, and a light gauze packing which has been dipped in a 1 to 3,000 adrenalin solution is applied. The patient is instructed to go home and keep quiet, preferably in bed. On the following morning packing is removed, the slight hemorrhage which follows soon ceases, and the operation is over. The

Figure 4. Author's Nasal Scissors

nose is washed out twice a day by the patient at home with a warm alkaline solution, and healing is complete in a week or ten days.

Recently I have been leaving the packing out, and simply dusting the parts with the powdered supra-renal gland. The patient is given a powder blower, with a small portion of this powder, and instructed to insufflate a little of the powder every two or three hours. So far it has worked very satisfactorily.

This operation has proven so satisfactory both to myself and patients, and the relief experienced is so marked, that I rarely find it necessary to resort to any other method.

Seventh and Race Streets.

A CASE OF EPITHELIOMA OF THE LARYNX. THYROTOMY. RECURRENCE AND DEATH IN FOUR MONTHS.*

BY CHARLES H. KNIGHT, M.D., NEW YORK.

A gentleman, 52 years old, was referred to me December 4, 1899, with the following history:

Since an attack of grip one year ago his voice has been hoarse and at present he is almost aphonic. He is constantly annoyed by a hacking cough. Sputa are scanty and contain no tubercle bacilli, and there are no signs of lung trouble. Family history is good. The habits and general health of the patient himself have always been excellent, except for occasional attacks of rheumatism, and several years ago an obstinate course of eczema affecting the face and chest. He has been subject to boils and all his life has been more or less disturbed by warts on his hands. The latter fact is of interest in connection with a "verrucous diathesis" upon which great stress was laid by one expert whom he consulted. About fifteen years ago he had some kind of ulcerating lesion on the distal phalanx of his right thumb, which refused to heal and finally the thumb was amputated. The character of this ulcer is not clear, but it is said not to have been malignant and there has been no recurrence. There is no history of syphilis. The patient is not an inordinate voice user and is a moderate smoker. He has more or less chronic catarrh of his nose and pharynx, but is not a mouth-breather. He looks old for his years, but is very active in business and is seldom indisposed.

With the laryngoscope the right vocal band is seen to be infiltrated by a mass which roughens its margin and interferes with its motility. It is livid in color, but there is no general hyperemia of the larynx. In fact the mucous membrane in the region of the arytenoids seems pale and flabby. There is a small superficial ulcer near the vocal process. The voice is husky and breathing is stridulous, especially on exertion. The breath has no fetor. There is no pain, but the larynx feels tired and there is a sense of constriction after use of the voice. There is marked follicular pharyngitis and the right nostril is partially occluded by a deflection of the

*Read at a meeting of the American Laryngological Association, May 26, 1902.

septum. No glandular enlargements can be detected and there is no pain nor sensitiveness over the region of the larynx. A small fragment removed with cutting forceps gave negative results on microscopic examination. A course of mixed treatment with increasing doses of potassium iodide made no impression and the conclusion was reached that the lesion was malignant. On being told of my suspicion the patient positively refused operation. He was therefore given a spray of suprarenal extract solution containing a grain of phenic acid in each ounce and inhalations of menthol in fluid albolene five grains to the ounce. He was directed to use his voice as little as possible and to stop tobacco and alcohol. About this time he confessed to me that four months before he had consulted one of my colleagues, who after several examinations, a tentative course of potassium iodide, and microscopic examination of a fragment removed with forceps, had pronounced the disease epithelioma. Of three sections examined at this period only one showed characteristic malignant changes. From this time the case progressed so favorably that there was a reasonable doubt of the opinions given. The voice was partially regained, the cough ceased, and the general condition improved until October, 1900, when he came to see me after a month in the woods, where he had caught a severe cold. He was aphonic, was coughing constantly and expectorating freely. The larynx was very angry and swollen the infiltration of the right side was much increased and the sputa were copious, tinged with blood and very fetid. To my surprise the patient began to improve after a week or ten days and slowly recovered ground in every particular, except as to his voice. In February, 1901, he consulted a leading specialist in a neighboring city, who expressed the opinion that the disease was benign, and that it should be removed through the mouth, or in the event of failure, by external operation. Encouraged by this opinion and being very anxious to recover his voice, he finally persuaded himself to submit to operative interference, although fully warned of the probable consequences of an endolaryngeal operation. Accordingly the latter part of May a portion of the growth was removed from the right vocal band with Mackenzie's forceps. The microscopic report follows: "The tumor began as an epithelial papilloma. The bulk of the growth still maintains the type of benign epithelial papilloma, which recurs locally after operation, but does not produce metastases. It is not possible to

say positively that the growth has passed the limits of simple papilloma and belongs to the class of malignant infiltrating epithelioma. In order to determine this point it would be necessary to have more of the underlying tissue." There was a great deal of inflammatory reaction after this operation, dyspnea became more and more distressing until on June 2, two weeks later, I was obliged to do a tracheotomy. A week after the trachea had been opened the larynx was split from below upwards, in the interval the patient having been very uncomfortable and at times in danger from clogging of the tube with viscid secretion. With the exception of the left ventricular band, all the soft parts were thoroughly curetted, especially the right vocal band and a considerable area of the lateral wall of the larynx immediately beneath it. In about a month signs of glandular involvement appeared and the wound over the thyroid, which had healed, began to break down. The conditions rapidly grew worse and death occurred four months after the laryngo-fissure and less than three years after the first laryngeal symptoms.

Contiguous pieces of tissue removed at the thyrotomy from different regions of the larynx were sent for examination to two microscopists and their independent reports are of interest.

Specimen No. 1, from right ventricle and band:

Report a—Superficial epithelial papilloma.

Report b—Carcinoma (epithelial type) in a high state of degeneration.

Specimen No. 2, subglottic neoplasm right side:

Report a—The great bulk of growth is a superficial epithelial papilloma—the epithelial growth has in a few islands invaded the connective tissue and taken on the characters of true epithelioma. These foci are of small extent and probably metastases have not yet occurred.

Report b—Carcinoma formation (epithelial type), but not so degenerated as Specimen No. 1.

The points of special importance in the foregoing case seem to be as follows:

1. The erratic clinical history. Instead of the usual progressive development of the disease, periods of marked remission and actual improvement were exhibited. While it is by no means unusual for cases of this kind to linger for years without much change, we rarely witness such decided improvement as in this instance twice occurred after the case had assumed a most threatening aspect.

2. Tardy invasion of the lymphatics, but speedy involvement after surgical interference with the neoplasm. It is a notorious fact that the structures of the larynx being included in a cartilaginous box through which no lymphatics pass a cancer strictly intrinsic is slow to infect the glands. But when this barrier is broken down at once the morbid germs begin their encroachment upon the lymph channels with the usual metastatic sequelae.

3. Contradictory microscopic testimony. Such results obtained with specimens removed as were these so as to include the whole thickness of the neoplasm would incline us to accept with hesitation reports based upon superficial fragments excised with laryngeal forceps. This experience should by no means discredit microscopic evidence at least when it is positive. It merely enforces the importance of repeated examinations when results are negative in the face of suspicious clinical signs. As to the latter the laryngoscopic picture gives us no single feature upon which we may rely for a diagnosis. The yellowish-white appearance described by Moritz Schmidt, the snow-white surface referred to by others, the sharp-pointed grass-like lesion considered by Felix Semon "extremely suggestive of malignant disease," are by no means always present. In nearly every case we are compelled to reach a conclusion by a careful and prolonged study of all the symptoms subjective and objective. The importance of recognizing the disease at an early stage, when a modified laryngectomy or an endolaryngeal operation may fill the requirements, is beyond question. A cancer of the larynx so extensive as to demand complete removal of that organ with adjacent parts is not operable. The chances are that the disease has already crept along a lymph channel beyond detection where it will soon become a focus of recurrence. The situation being fairly presented, but few would consent to submit to the mutilation involved in a complete laryngectomy, especially since immunity cannot be thereby ensured. In deciding upon the proper course to pursue in a given case the age, temperament, environment and general condition of the patient are considerations hardly secondary to the extent and duration of the lesion itself. Provided the latter can be identified early enough and in cases strictly intrinsic it seems to be clearly proved that a laryngofissure without extensive sacrifice of tissue is capable of eradicating the disease and protecting against recurrence.

A NOVEL FEATURE IN THE TREATMENT OF TUBERCULAR LARYNGITIS, WITH RECITAL OF A PRESUMABLY CURED CASE.*

BY F. L. STILLMAN, M.D., COLUMBUS, OHIO.

"One swallow maketh not summer," neither does one case of alleviated tubercular laryngitis prove that the methods of treatment pursued in that individual case will be effective in all cases. Still, the refined technic which accomplishes the best results in both medical and surgical diseases is arrived at largely by a process of less efficient. In the case reported many favorable elements combined to make the outcome more than usually satisfactory, but the writer thinks that the reflected sunlight treatment, the idea of which is original so far as he has been able to discover, had its fair share in the more or less favorable outcome of the disease.

The treatment by this method will probably not be found as practicable in private practice as in sanatorium treatment. In the latter case trained assistance can be utilized for carrying out methods of treatment the minute details of which are essential to success. In the patient's home, as a rule, the things accomplished are measured by the energy of the patient himself, who has the least potentiality of any of the inmates of his household.

In the title of the paper it is called a "presumably" cured case. The patient seems well, does her own housework much of the time, has a zest for life, and it is hoped that there will be no relapse; but sufficient time has not elapsed to call the case positively cured.

The patient first came to my office November 19, 1900. She was 5 feet in height and weighed 92½ pounds, and was in pretty bad shape. Examination—Lungs: The apices showed a moderate amount of consolidation, and in an area as large as a silver dollar high-pitched expiration and a friction rub and pain subjectively, were found. This area was just to the right of the sternum and at fifth interspace. There was an afternoon elevation of temperature of about 1½ to 2 degrees. A microscopical examination of the sputum gave a report of the presence of tubercle

*Presented at the Eighth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Washington, D. C., June 2, 1902.

bacilli—few in number, however. Larynx (See Fig. 1): The vocal cords, in so far as visible, were thickened and ulcerated; arytenoids and aryepiglottic folds swollen. The epiglottis was very much infiltrated, and the left upper edge had been eroded until the epiglottis at that point was only one-half its original height. The very much swollen tissues at this point presented the "mouse-nibbled" appearance often described, mingled with a grayish slough. At intervals on the ulcerated surface appeared four or five acuminate, bright red granulations. She was entirely aphonic. The pain was not quite so severe as is usual in these cases, and throughout the illness it was only during occasional short periods that cocaine was needed for its analgesic effect. It is to be noted that in this case it was always found more satisfactory than orthoform.

The patient is married and has two small children. She has always enjoyed good health. Three years before her first visit to me she was treated by her family physician for pharyngitis. She says that at that time there was a small superficial ulcer on the left side of pharynx. This responded to treatment, but the character of it can now only be surmised. As local treatment was strongly required, and as the financial condition of the family would not allow it, I did not advise change of climate. The condition of the larynx made the prognosis very bad under any circumstances, and finding that I could get the patient's complete co-operation in any line of treatment proposed, I determined to attempt to carry out a line of hygienic treatment that had always appealed to me theoretically. Cold weather was coming on, but she agreed to live in the sunlight and open air as much as possible. She was too weak to take long walks, so she sat in a wagon in the back yard, bundling herself up in warm robes. In order to obtain the most effective bactericidal and vitalizing action of sunlight I taught her to reflect it directly into the larynx. The neighbors were often seen tapping their heads significantly when they beheld the frail, but determined little woman with two mirrors in her hands, and her mouth widely agape, following the course of the orb of day like a winter sunflower; but she was well repaid when she began to increase in weight and the pain and dysphagia began to diminish.

Finally, her strength was such that she could take long walks, and then her strength increased more rapidly. She began to have some voice in July, 1901. This gradually improved for a couple of months until it had fairly good quality—at which point it has remained. The weight gradually but with some fluctuations in-

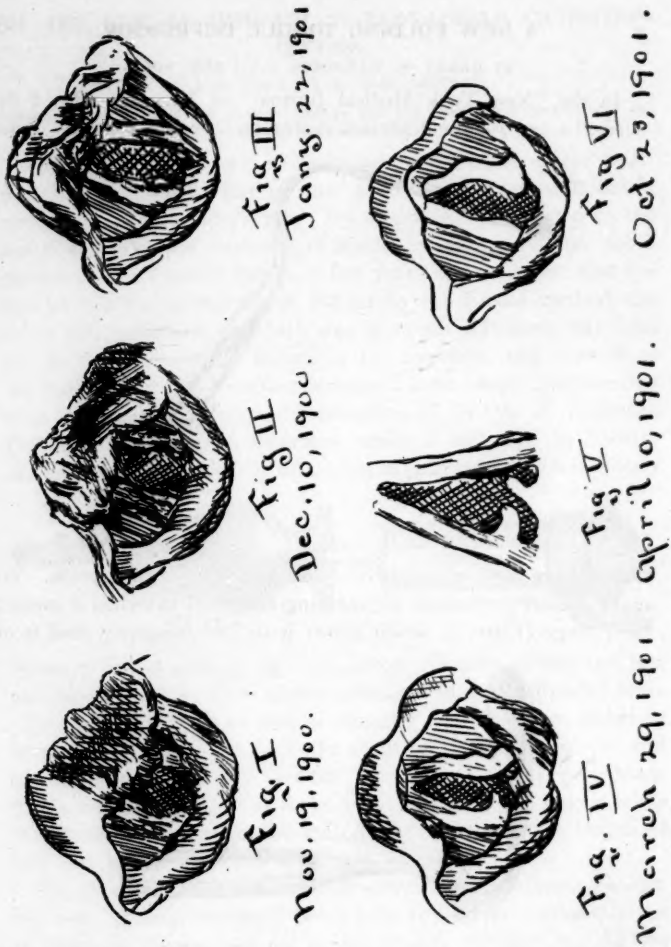
creased, until it now remains about 105. At present the larynx seems normal; she has, however, several times had some superficial ulcers develop on the back wall of pharynx or on one of the arytenoids. This has always responded readily to curetting and rubbing in of pure lactic acid. The condition of the lungs has likewise improved and they are causing no pathologic symptoms.

Internally she has had cod-liver oil and creosote and malt, and locally besides the use of frequent, at some periods almost daily, application of lactic acid, it has a number of times been found necessary to use cocaine, orthoform and an inhalation of menthol in albolene. Surgical treatment (curette, forceps, snare, Krause's ring and double curette, etc.,) have been employed several times to remove tubercular hypertrophies and areas of ulceration.

In order to make the report complete clinically, it should be stated that the progress of the case has been complicated twice by pregnancy. The first time was in May, 1901. The histories of her other pregnancies had been a tale of vomiting with great debility and emaciation in the early months. This time the unfavorable symptoms began at once, and the larynx began to get worse appreciably. Thinking that the case would undoubtedly prove fatal if the pregnancy was allowed to continue, I asked two physicians (one of whom was the physician by whom she had been referred to me), in consultation, and the unanimous opinion of the consultants was that the pregnancy should be terminated. This was done with quite satisfactory results. In the fall of 1901 (November) she became pregnant again, and after waiting longer than before, her general condition became so precarious that after another consultation it was decided to again terminate the pregnancy. Since that time she has had no relapse.

The drawings which accompany this will show by the dates, the rapidity of the progress. There has been no relapse since the last one dated, October 23, 1901, was drawn. Fig. 1 has been described above. In Fig. 2 the infiltrated tissues of the epiglottis are seen to have broken down into well-marked tubercular ulceration. In Fig. 3 it can be seen that cicatrization is taking place, which was so well advanced when Fig. 4 was drawn that only one ulcerated spot could be seen. Two tubercular hypertrophies were still present, one on the free edge of the right vocal cord, and one in the inter-arytenoid region. These developed still more until they presented the appearance seen in Fig. 5. Soon after that they

were removed. They had kept up the aphonia, and in a reasonable



length of time after the healing of the wounds of operation the voice began gradually to return.

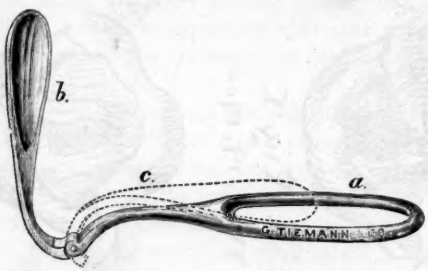
118 East Broad Street, May 14, 1902.

A NEW FOLDING TONGUE DEPRESSOR.

BY HENRY W. WANDLESS, M.D., NEW YORK.

In the "New York Medical Journal" of May 22, 1897, I described a new tongue depressor represented here in Plate 1. Since

then I have used it exclusively and with entire satisfaction. To make it more convenient for carrying around, I have had it jointed by a hinge (Plate 2), which allows it to fold compactly and is of



convenient size for the watch pocket. The joint is made so that the two parts are easily separated and is aseptic. Made by George Tiemann & Co., New York.

45 West Thirty-Second Street.

ON THE USE OF HOT AIR IN EUSTACHIAN CATHETERIZATION.

BY J. F. OAKS, PH.G., M.D., CHICAGO.

Professor Ophthalmology and Otology, Chicago Eye, Ear, Nose and Throat College and Harvey Medical College.

Although comparatively new, the use of heated air in the treatment of otitis media has become a recognized and well-known method among ear specialists. My attention was directed to the use of hot air in the treatment of middle ear deafness by the publications of Dr. Charles Enslee, a few years ago. I opine that the lack of interest in the use of hot air by the Enslee method, the merit and usefulness of which was generally admitted, has been due to the cumbersome feature of the apparatus and expense of the outfit. For the past two months I have been experimenting with an unique apparatus, the invention of Dr. W. K. Seelye of Dubuque, Iowa. This apparatus, which I will call the "Seelye heater," consists essentially of a brass tube around which is closely

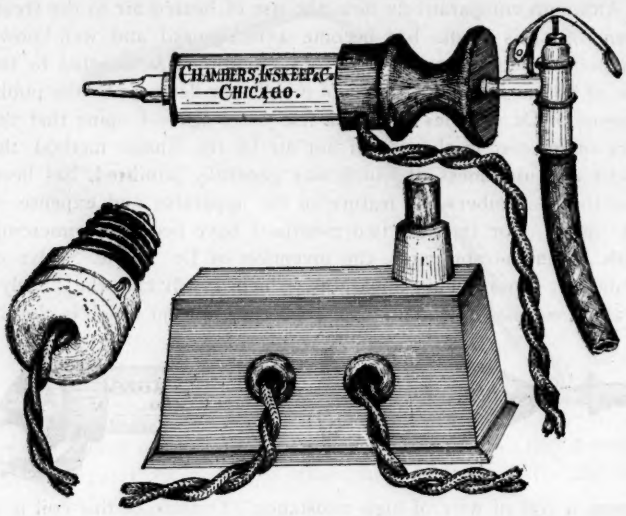
woven a coil of wire of high resistance. Outside of this coil is a packing of abestos, all of which is encased in a nickel-plated brass tube three-fourths of an inch in diameter and about two inches in length. The distal end is in the form of a metal tip of the size and form of the ordinary "cut-off" tip. The proximal end is made of black fiber so shaped as to be held easily with two fingers while the thumb rests against the cut-off, making the whole length of this very handy apparatus about 3½ inches.

The wire used is of a kind which offers high resistance, generating heat, causing the inner brass tube to become sufficiently hot to heat the compressed air in its passage through it. All the metal parts are of brass and all joints are either spun together or screwed, there being no soldering.

The conducting cords are attached by a screw plug to the lamp

socket. In the cord is introduced a single point button switch which is placed on the table within easy reach of the operator.

To operate the "Heater" close the circuit by pressing button of switch for four or five seconds. The Heater will then deliver air under ordinary pressure at the desired degree of heat for catheterization of the Eustachian tube, and will retain the heat long enough to complete the treatment of one patient.



If greater heat is desired as in Politzerizing with Pynchon's inflator, the current may be allowed to pass through the Heater eight to ten seconds. In no case should the switch be left closed more than ten seconds, as the heat would become so great as to injure the apparatus. As a safeguard, the current should be turned off at the lamp socket when through with the apparatus for the day.

The "Seelye Heater" as illustrated in the cut is beautifully and substantially constructed by Chambers, Inskeep & Co. of this city. It is light and easily manipulated, weighing but two ounces.

In the beginning of our experimentation with the "Heater" it was found that the silver catheter became uncomfortably hot at the proximal end, not only to the patient but also to the operator. This was in great measure remedied by the fitting of a fiber tip to

the proximal end of the silver catheter which formed a non-metallic connection between catheter and heater, which lessened to a great degree the heating of the catheter.

The use of the H. R. catheter suggested itself on account of its being a poorer conductor of heat, but its too great flexibility and liability to loose its distal curve by the heat employed, as well as the greater clumsiness of the instrument has discredited its use in my hands. Chambers, Inskeep & Co. make a metallic catheter covered by hard rubber which combines both rigidity of metal and the poorer heat-conducting quality of hard rubber. The caliber and lumen of this catheter are of ordinary size and being flexible, its distal curve, if desired, may be changed as it can be bent almost as freely as a silver catheter.

I have found that the sensations of the patient and familiarity with the heater precludes the possibility of inflicting unnecessary pain or doing any damage.

It is not my intention at this time to enter into a detailed discussion of the merits and rationale of hot air, nor to enumerate in detail the cases treated. Nor is it necessary for me to emphasize the superiority of Eustachian catheterization over other methods of middle ear inflation in cases of chronic middle ear deafness. Of one thing, however, I am quite sure and that is, that the use of heated air in Eustachian catheterization is not only soothing to the patient and of therapeutic value, but that it is decidedly more agreeable than the shock from a cold blast of air formerly used. Observations made in the treatment of a series of cases of chronic middle ear deafness discloses the fact that the improvement was more marked after each individual treatment with the "Heater" and the progress towards recovery more rapid, and that the results were in some cases brilliant. To be sure, much better results were obtained in the hypertrophic than in the hyperplastic cases; yet it was noticeable that in a few cases where the prognosis from a pathologic standpoint was bad and treatment pronounced as hopeless, the patient declared that there was subjective improvement especially in the relief of that usually distressing tinnitus.

In view of the difficulty of introducing superheated air in the

middle ear cavity it becomes a matter of speculation as to the full value of the hot air treatment above outlined.

In the series of cases thus treated I have used the "Heater" in connection with tympanic massage and the use of the vapors of iodine, menthol, camphor, etc., by the intercalation of Pynchon's modification of Buttle's inhaler (charged with a piece of fine sponge, medicated with a few drops of a mixture of equal parts of menthol, camphor, tincture of iodine and chloroform) between catheter and the "Heater." (See illustration.)

In all cases the nose and naso-pharynx received appropriate treatment. The treatments were given at intervals of two or three days.

In conclusion I wish to call attention to the charming effect of using the "Seelye Heater" and the Pynchon inflator (with the medicated sponge) by Politzerization, for the persistent otalgia and annoying fullness during the convalescent stage of an acute otitis media.

905 Stewart Building.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY—EIGHTH ANNUAL MEETING.

(*Proceedings continued from page 630.*)

Tuberculosis of the Middle Ear with Report of Cases.

Dr. Max A. Goldstein, of St. Louis, was the author of this paper.

(This paper will appear in a later issue of THE LARYNGOSCOPE.)

DISCUSSION.

Dr. Robert Levy, of Denver, said that if we more often resorted to such microscopical examinations the literature of this class of cases would probably be extended. While not questioning the diagnosis at all he would suggest that in some cases in which tubercle bacilli were found there was the possibility of the extraneous presence of the tubercle bacilli.

Dr. E. B. Dench also expressed the opinion that this method of systematic examination if extended would probably show evidence of tuberculosis in very many more cases. This had been the experience in joint tuberculosis. The paper was certainly most instructive and suggestive.

Dr. J. O. McReynolds reported the case of a child six years old, who had been brought to him some years ago with chronic disease of the middle ear. He did a radical operation and completely cured the local condition. Two years later the patient developed disease of the spine and hip joint, and died of tubercular meningitis. He looked upon this case as an example of primary tuberculosis of the middle ear. He would like to know if there was any scientific ground for the popular notion that the healing of tubercular process in one part of the body would result in its breaking out in another part.

Dr. H. W. Loeb said that tuberculin should be used in these cases with a view to determining the presence of tuberculosis elsewhere. He did not think a reaction would be obtained from the process in the ear.

Dr. G. L. Richards asked for the experience of Dr. Levy with regard to the tuberculin test.

Dr. Levy said that in very incipient cases of tuberculosis the tuberculin had often cleared up the diagnosis, but he had never used it in connection with purely local tuberculosis.

Dr. Wm. L. Ballenger, of Chicago, said that he had had no experience with the tuberculin test in local processes, but he had observed its action in incipient tuberculosis. He mentioned two cases in which experts in physical diagnosis had found no pulmonary tuberculosis, and yet the appearance of the larynx suggested tuberculosis, and the application of the tuberculin test produced the characteristic reaction. He said no reason why tuberculosis should not be primary in the larynx and in the middle ear.

Dr. John A. Thompson, of Cincinnati, said that it was claimed that tuberculosis is always first a disease of the lymphatic glands, either of Waldeyer's ring or of the intestine, and that tuberculosis never occurs in the lungs until the lymphatics at the root of the lungs are first involved. This, he thought, would enable one to make a diagnosis of tuberculosis before there were any physical signs in the lungs. In cases of obstinate catarrhal laryngitis with an evening rise of temperature, even without physical signs, he favored making the diagnosis of incipient tuberculosis and sending the patient to a proper climate. He had known several such cases to subsequently develop pulmonary tuberculosis.

Dr. Goldstein said that the remark made by Dr. Levy simply corroborated his own view with regard to the possibility of local tubercular infection.

SECOND DAY—TUESDAY, JUNE 3.

Report of a Case in which Laryngeal Symptoms Complicated Purpura Hemorrhagica.

Dr. Joseph T. Gibbs of Philadelphia, reported this case. The patient, a man of forty-two, had been well up to three weeks before admission to hospital on November 3, 1901. At that time he had been vaccinated, and ten days later the legs became swollen and a hemorrhagic rash appeared upon them. About this time there was a bloody discharge from the bowel. There were subsequent crops of hemorrhagic spots, and eventually the urine became bloody. On December 19 the speaker had first seen him because of an attack of hyspnoea, and crowing respiration that had existed for thirty-six hours. The entire larynx was red; the breath sounds were weak, and there was marked laryngeal stenosis. On the following day after vomiting much chocolate colored mucus, the breath be-

came nearly normal, and the larynx then showed less infiltration and the surface of the mucous membrane was covered with fluid blood. An application of cocain and adrenalin gave marked but temporary relief, the hemorrhage recurring, and the patient dying the next day of exhaustion. Evidently the dyspnoea was due to hemorrhagic oedema of the submucosa of the larynx similar to the subcutaneous purpuric spots in simple cases. The relation of the illness to the vaccination was interesting, but by no means clear. The possible relation between the adrenalin and the last hemorrhage was also worthy of consideration.

Hemorrhage in Nasal Operations.

Dr. John O. McReynolds of Dallas, Texas, instead of reading the full paper on this subject, reported one case of severe hemorrhage occurring after the use of adrenalin. The case was that of a man of 25, from whom he removed without difficulty an exostosis situated rather high in the nose. The hemorrhage occurred almost immediately after the patient's leaving the office, but he did not see the man for about two hours, and then he was almost exsanguinated. The hemorrhage was controlled by packing the posterior nares.

Dr. W. Freudenthal of New York, exhibited a device which he used for controlling hemorrhage during and after operation. It consists of a double ice bag which is applied like a saddle over the nose, and is strapped around the head. In addition, he obtained valuable asistance from the use of stypticin internally.

Dr. J. A. Thompson, thought the hemorrhage was due to injury of one of the small arteries of the septum. Hemorrhage could be much more easily controlled by the use of cotton saturated with a styptic than by the use of gauze.

Dr. J. A. Stucky said that adrenalin should be used in the strength of one to six or eight thousand. He was accustomed to control nasal hemorrhage by the use of a little strip or dental rubber over which is placed a piece of Bernays' sponge or splint.

Dr. H. Bert Ellis of Los Angeles, Cal., said that according to his experience, hemorrhage was much less likely to occur after adrenalin alone than after the combination of adrenalin and cocain. Patients put on the chloride of calcium prior to operation were rarely troubled with secondary hemorrhage.

Dr. M. A. Goldstein said that it was his custom to saturate the gauze with oil or melted vaseline in order to make it impervious, and hence, suitable for controlling hemorrhage. He believed the

Simpson modification of the compressed cotton splint, shaped in the form of a nasal plug, was a very satisfactory means of controlling nasal hemorrhage.

A Physiological Statement of Some of the Symptoms of Mouth Breathing.

Dr. Wm. L. Ballenger of Chicago, presented this paper. He said that examinations of guinea pigs which had been kept in an atmosphere saturated with starch powder and nitrate of silver showed a remarkable thickening of the lining of the air vesicles, and this had led him to suspect that possibly a pathological change in the air vesicles might in some way cause an auto-intoxication which would find expression clinically in mouth breathers. In this class of cases the respiratory function of the nose was lost, and he did not doubt that this loss resulted in certain changes in the respiratory apparatus of the lung which impaired its capacity to carry on the interchange of gases. Faulty metabolism necessarily resulted, and carbon dioxide accumulated in excess in the blood, and then acted as a violent poison to the leucocytes. The scavengenial function of these cells are thus impaired and the "half way" products of oxidation are left to circulate through the system. Oxygen being taken up in deficient quantity still further adds to the toxic properties in the blood, and gives rise to the nervous and developmental phenomena so familiar in mouth breathing in children.

It seems rational, therefore, to him, to assume that the symptom complex of mouth breathers is largely due to some change in the air versicle walls of the lungs, whereby the normal interchange of gases (oxygen) and carbon dioxide is interfered with.

Dr. Eugene Vansant of Philadelphia, thought the cases in which the respiratory function was abolished were very rare. In a case of severe adenoids in a child asleep there would still be found nasal respiration. If these persons were true mouth breathers there would not be much difficulty; it was because they remained nose breathers that nervous disturbances arose. There was not the slightest doubt that there was immense thickening of the epithelial lining of the pharynx and larynx, but he was disposed to doubt that such thickening extended to the air cells, except in severe cases of long standing.

Dr. J. A. Thompson said that the interchange of gases was practically an osmosis, and it was well known that this would not take place through a dry membrane. Where nasal respiration was ab-

normal the pulmonary alveoli became unnaturally dry, and this was probably one of the features in the deficient osmosis and oxidation of the blood.

Dr. W. Freudenthal, of New York, said that some years ago he had made a number of experiments on this subject, and had found that children with pronounced adenoids gave off about one-ninth or one-eighth of the normal quantity of moisture. Four months after the removal of the adenoids one boy gave off about the normal amount of moisture from the nose. If the nose failed to supply the moisture to the air this would be supplied for a time by the pharynx, but the latter would soon fail also.

Dr. Ballenger, in closing, said that it was not necessary to have complete nasal obstruction in order to produce the pathological conditions discussed in his paper. The point made by Dr. Thompson seemed to him very well taken.

Electric Light in Diseases of the Respiratory Organs.

Dr. W. Freudenthal of New York, read this paper: At first he had hoped to affect the deeper tissues by the actual passage of bactericidal rays into them, but it was found that these just penetrate the epidermis and cutis. In studying the therapeutic effects of the electric light one must distinguish between the incandescent and the arc light. The author said that he had been experimenting on this line as early as 1889. He had found the arc light preferable even for the larynx. He made use of the ordinary search light, in front of which the patient sits at a distance of six or eight feet. Most of the screens suggested for removing the heat were objectionable because they absorbed in large amount certain other important rays. He used the electric light in the treatment of both laryngeal and pulmonary tuberculosis, and although he had never cured an advanced case by this means, the treatment was of value just as was the use of morphine, heroin or hydrotherapy; indeed, the electric light treatment stood on the same level as hydrotherapy, but was superior to the latter because it relieved pain and facilitated expectoration.

Because of the neurotic element in cases of hay asthma the results of the electric light treatment had been even more conspicuous.

Dr. H. Holbrook Curtis asked the effect of direct sunlight on laryngeal phthisis.

Dr. Robert Levy said that he had never been able to satisfy him-

self, from the published reports, that the application of sunlight or artificial light was an important adjunct to the treatment. Equally good results, he thought, could be obtained in high altitudes where sunlight was most abundant.

Dr. Freudenthal said that he had applied sunlight and was accustomed to advise his patients to expose themselves to sunlight preferably while undressed.

Symposium on Diseases of the Accessory Sinuses.

Dr. Robert C. Myles of New York, introduced this symposium by a general paper.

Ethmoidal Cells.

Dr. Eugene L. Vansant of Philadelphia presented this paper:

Sphenoidal Cells.

Dr. Cornelius G. Coakley of New York, read this paper:

Antrum of Highmore.

Dr. F. C. Cobb of Boston, read this paper:

The Diagnosis and Treatment of Frontal Sinus Disease.

Dr. Lewis A. Coffin of New York, presented this paper:

The Technique of Frontal Sinus Operations: Report of Three Cases Without Nasal Drainage.

Dr. H. Holbrook Curtis, of New York, presented this paper, but for lack of time read an abstract only, and reported the cases and commented briefly upon them.

The entire series of papers of this Symposium was published in the July, 1902, issue of The Laryngoscope.

GENERAL DISCUSSION.

Dr. John O. Roe, of Rochester, presented a series of skulls to show the wide variations in the sinuses, thus emphasizing the necessity of modifying the method of treatment to suit the individual case. Not only were there marked variations in the location, size and direction, but in the presence of septa and in their number. In some cases there was almost no frontal sinus, showing the danger of using a drill in opening the sinus, which, under such circumstances, would pass through and injure the meninges. He had devised a curved drill run by an electric motor instrument by means of which it was easy to enlarge the natural channel from the frontal

sinus into the nose. The end of the drill was protected on one side by a shield so as to enlarge but one side of the passage, and thereby avoid a subsequent closure of the passage.

Dr. James F. McCaw, of Watertown, N. Y., spoke of the case of a lady who had had all her teeth extracted eighteen years before, coming under observation. Because of a chronic discharge and the presence of roughened bone, an incision was made along the alveolar process,and he was surprised on coming down upon a tooth lying in a cavity of the alveclar process and parallel to it. The tooth was removed and the cavity curetted, and since then there had been no trouble.

Dr. Thomas J. Harris, of New York, said that in his hands trans-illumination had proved of very little value in connection with the frontal sinus. In many cases in which pus had been found at operation there had been no darkening at all on trans-illumination, and in other instances when there was darkening little or no pus had been found. He agreed with Dr. Coffin that in each case one must decide whether the open or closed operation should be selected. He firmly believed that in cases in which it was not possible to find marked disease of the ethmoidal cells, the quickest and most satisfactory results would be attained by doing the open operation, as described by Dr. Coffin. This operation could be done thoroughly and yet leave practically no deformity.

Dr. Sargent F. Snow, of Syracuse, said: A large majority of these frontal sinus cases could get well with better drainage into the nasal passages; not that he recommended the internal operation exclusively in all cases. Quite recently he had discovered that a number of these chronic cases had an underlying syphilitic taint, and that a thorough course solved the problem. Investigation along this line is replete with surprises.

Dr. Thomas H. Farrell of Utica, asked for experience regarding the production of distressing symptoms by adrenalin.

Dr. R. C. Myles said that while small frontal sinuses did well under packing, large sinuses would require packing for an indefinite period, and would fill up with granulations very slowly. Some people could be kept very comfortable by having a permanent opening in the antrum.

Dr. C. G. Coakley said that he had found the periosteum so much diseased in many cases that he doubted if gentle curettage would suffice. Many patients who had suffered for a long time from antrum disease were greatly improved by a change of air. He

had tried the X-ray in cases of disease of the accessory sinuses, but in only one instance had he derived any material aid from his source except for the determination of the presence and size of a sinus. His rule was not to irrigate except at the close of the operation. The packing was changed as infrequently as possible, because each change of dressing disturbed the granulating process. By operating near the inner angle of the eye the resulting scar would be almost imperceptible.

Dr. L. A. Coffin said he could not see how Dr. Roe's drill could be made to pass down into the fronto-nasal duct. In one case in which there was pain and a shadow on transillumination, although no symptoms pointing directly to the nose, on opening the sinus an angioma was discovered.

A Study of Corditis Cantorum or Nodes with Special Reference to Etiology and Treatment.

Dr. Frank E. Miller, of New York, read a paper on this subject, and illustrated it by lantern slides and by the presentation of several patients, together with a demonstration of the exercises employed in carrying out the treatment.

(This paper will be published in extensio in a subsequent issue of THE LARYNGOSCOPE.)

Primary Epithelioma of the Uvula and Soft Palate, and Treatment with the Roentgen Ray.

Dr. James F. McCaw of Watertown, N. Y., read this paper, reporting a case. A screen of block tin with a cylinder of the same material served to direct the X-ray upon the desired part. The diseased surface had healed very satisfactorily under the treatment, the chief feature of the healing process being the comparative freedom from cicatricial tissue, and slight degree of contraction.

Dr. C. G. Coakley said that he had used the X-ray in a case of epithelioma of the superior maxilla, supposed to be of about three weeks' duration. The man refused surgical operation, and was treated by the x-ray for a week by Dr. William James Morton with some improvement. The patient then went away for a short time on business, and on his return the disease was found to have advanced very considerably.

Dr. Otto J. Stein of Chicago, referred to a case of leukoplakia of the soft palate and mouth that he had treated for about three months by the usual method without benefit. Last December the x-ray treatment of the case had been begun by Dr. Pusey, and after

two months he had reported the case as a failure. After another period of two months the result was still negative. In Dr. McCaw's case it seemed difficult to determine how much of the good result was due to the surgical measures, and how much to the x-ray.

Dr. McCaw said he believed most of the good results that would be obtained from the x-ray in this class of cases would be after incision of the growth. The result would also vary somewhat, depending upon whether a "hard" or a "soft" x-ray tube was used.

Report of a Case of Laryngeal Papilloma in a Child, with Remarks

Dr. C. Dunbar Roy, of Atlanta,Ga., presented this report: He had used the method of spraying the larynx with alcohol, as recommended by Dr. Delavan, and with good results in some instances. Various methods of treatment were discussed by the author. He advised that the children should be kept under observation, and the milder methods given a fair trial before resorting to surgical intervention. In adults, especially if there were interference with the breathing, the endolaryngeal method might be tried. In children, prolonged tracheotomy might be required. Laryngotomy should be done only when all other methods had failed.

Dr. Wendell C. Phillips, of New York, insisted upon the great care necessary in making the diagnosis of what seemed to be benign neoplasms of the larynx, because many of these proved to be malignant. In one such case occurring in his own practice, the growth proved to be an epithelioma in a very large stage. Almost any one observing this growth would have declared it to be a papilloma, yet microscopical examination showed its true nature.

Dr. Thomas J. Harris said he wished to emphasize the value, in prolonged papillomatous formations, of opening the trachea. A case was recalled in which the growths had been removed repeatedly by Dr. Nichols endolaryngically, and in which alcohol had also been used unsuccessfully. Prolonged tracheotomy was then resorted to in order to give the part a prolonged rest. This succeeded admirably.

Dr. C. G. Coakley spoke of the similarity in structure of so-called papillomata and syphilitic growths. He was in favor of removing the papillomata in both children and adults as soon as possible. Where the base was broad they were, of course, difficult of removal. It was his habit afterward to make use of alcohol in order to postpone recurrence. Where the attachment was small one removal would often suffice.

Dr. W. B. Shields of St. Louis, referred to the case of a physician of seventy years, upon whom he had operated twice, supposing the growth to be a papilloma from its gross appearance. Microscopical examination showed it to be a sarcoma.

Dr. Roy, in closing, said that he was opposed to the method of Coakley and Phillips of removing a portion of the growth for examination, because this afforded an excellent opportunity for autointoxication, and for the change of a benign into a malignant neoplasm. He was not in favor of removing a growth in the larynx as soon as found; it was better, in his opinion, to watch it carefully and test the effect of various medicinal applications.

Abductor Paralysis of the Larynx.

Dr. D. J. Gibb Wishart, of Toronto, Ont., read this paper:

(This paper will be published in extensio in a subsequent issue of THE LARYNGOSCOPE.)

Report of a Case of Epithelioma of the Tympanic Cavity, Involving the Mastoid.

Dr. W. H. Haskin, of New York, reported this case: The patient was a woman of forty-two, first seen in April, 1901. She complained of intense pain in the left ear, radiating over the head and down the neck. There was also an offensive otorrhea, and a history of a discharge from the ear at intervals for thirty years. A polyp was removed with a snare. Subsequently there had appeared what was thought to be a malignant growth. A complete mastoid operation was done, and pus found in the tip of the mastoid and disease in the squamous portion. Examination of the tumor indicated that it was not malignant. On June 24, the patient was readmitted with a swelling below the ear. The sinuses were opened up, and the granulations removed were then reported to be epitheliomatus. When seen on April 15, 1902, there were large secondary growths around the ear.

(*To be Continued.*)

WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION—SEVENTH ANNUAL MEETING.

CHICAGO, APRIL 10, 11 AND 12, 1902.

President, C. R. Holmes, M.D., Cincinnati.

Secretary, W. L. Ballenger, M.D., Chicago.

President's Remarks:—Gentlemen of the Association, and Officers: I bid you welcome, and it is with pleasure that I see so many with us at this early opening. I have reason to believe that this is going to be a successful meeting in every way, scientifically, socially—they have provided for us—and numerically. The association has taken on a rapid growth, and the officers who have looked and watched over it the past few years report it is rapidly growing. Last year we took in forty new members, and I believe there are now about seventy applicants on the list to be passed upon; so that we are growing rapidly. There is need for an association of this kind. There are a great many men throughout the West who cannot go East, and there are, especially in the Ophthalmologic Association, a limited number only admitted, and it is for the general good of the profession throughout the West if we have a good, scientific, working association. The physician who has been properly qualified, and who has conducted himself according to the ethics and the standards of the American Medical Association, should be permitted to enter. It is a good to him, the profession at large, and certainly to his patients. No man comes to a meeting of this kind without going back much benefitted, and his benefit is for his patients.

I have thought it best not to give the stereotyped presidential address, but I am going to give instead an illustrated lecture on

The Development of the Ear from the Lowest Forms of Animal Life up to Man.

The lecture was profusely illustrated by stereopticon views, showing the minute anatomy of the organs of hearing in its gradual ascent in the animal world.

The Dynamics of Nasal Disease in Relation to the Maxillae.

G. V. I. Brown, of Milwaukee. This paper will appear in a subsequent issue of THE LARNYGOSCOPE.

DISCUSSION.

Dr. Black, Milwaukee:—In regard to what has been said of the muscular action of the process of mastication upon the deformity of the septum is well illustrated in a case that came under observation about two years ago, Mrs. T. G., aged 33. She came to seek relief for extreme deafness, and had just recovered from a severe attack of nervous exhaustion. Her physical condition was greatly reduced, and she had difficulty of breathing through the nose, owing to a lateral deflection of the cartilaginous septum. She being in such an emaciated condition that it was impossible to operate upon her, and having examined her mouth and found irregularities in the shape of her arch, the left side being three-sixteenths of an inch higher than the right side, I suggested that she go to Dr. Brown, and have the teeth regulated, and in that manner be able to masticate her food better, and so be in better shape for operation. Dr. Brown commenced widening the arch. About ten days afterward she came to the office, and very much to my surprise, remarked that she could breathe fairly well through her nose, and after continuation of the pressure, Dr. Brown applied by the apparatus, the stenosis was still less, and when that part of the work was finished it was found, by a very slight operation after the manner of Asch, the septum was straightened and complete nasal breathing was restored; also at the same time her speech, which had been very hard to understand, was remedied, so it was quite easy to understand what she said.

The next case was a so-called saddle nose; a split septum. That was divided and produced a condition by which the air passed through the nose.

Post-Operative Management of Intra-Nasal Surgery. By Dr. M. A. Goldstein, St. Louis.

(This paper will appear in full in a subsequent issue of THE LARYNGOSCOPE.)

The Best Means of Removing Turbinal Obstructions. By Dr. J. W. Murphy, Cincinnati.

(This paper is published in full in this issue of THE LARYNGOSCOPE.)

DISCUSSION.

Dr. Holmes, Cincinnati:—In 1888 I began to look about for some more suitable method of treating these hypertrophies than by the galvanic cautery. While the latter has its place in nasal surgery, and especially where we only wish to reduce a moderate amount of swelling, yet in extensive reduction I think it is not the best thing. It does not remove enough tissue. It must create some slight infection. All this is avoided by a clean, surgical operation. My first hundred cases or so I used the galvanic cautery and mixed it with the operation. I found that unsatisfactory. I then used the post-nasal sound and found the following winter it was necessary to do more operating. I then removed the swollen portion of the turbinated, but there would be cases that would come back. I then determined to remove a small portion only, making a bone scar. (Illustrates on the board.) If you can cut off a portion of this, then take off an edge of the bone and then finish the operation with scissors, you will have a V-shape. It becomes like this—nothing but a cicatricial scar, and no matter how much swelling over the rest of the turbinated body, you will always have that condition. After about 600 or 700, my nostril on the right side was obstructed frequently, and also my right Eustachian tube; Dr. Vail cauterized at intervals for a year, and finding it did not relieve me, I determined to have this operation done upon myself. That has been six years ago, and an Eustachian catheter has never passed my nostrils since.

We will do damage if we take too much. We can also remove too little. You should cocainize your patient first thoroughly. There are three grades of swelling; a catarrhal swelling that will recede entirely; then the beginning pathological swelling, and the third stage where there are fibrous changes taking place that nothing will relieve but removal. What you want is to put the nose into its normal condition, and unless you study your cases carefully and watch them preceding the operation and study them under the influence of cocaine you will remove too much or too little tissue. It is easy to remove a whole turbinate; it is difficult to take out a small piece. I have operated between three and four thousand cases in private practice, and my own right nostril is a practical demonstration that I believe in the operation.

Dr. Stillson, (Indianapolis):—I avoided the operation of turbinotomy and fought it on the floor of this society for a number of years before I was brought to the knowledge that sometimes our preju-

dices stand uppermost in our minds, and we owe it to ourselves and to our patients and to the profession to have a reason for the faith which is in us, and that when we do have such a reason we should have the courage to act. I was brought to this knowledge through a patient who was under my care. I think I treated the man for nearly a year. He passed from under my observation, and I did not see him for some time, one day he came in and said: "I have come to make an apology to you." I did not know he owed me one. "I want to do so now." He was hearing excellently. He recalled to me that he was under my care, and said that just a little while after he left me he had another relapse, and happened to be in Cincinnati, and a brother took him by the arm and took him down to Dr. Holmes. The doctor performed turbinotomy, and in a few days or weeks he had recovered, and has not had a bit of trouble since. Of course, what could I do but compliment the man upon his success, and that he had done the right thing. But I commenced to think of this thing I had been fighting, and it occurred to me I should look more into it, and have less prejudice, so I began operating these cases in this way.

I wish to say that my views have been very materially modified and changed.

Dr. Vail, Cincinnati:—I was with Dr. Holmes when he first began these investigations in connection with this operation in 1889—I was with him 10 years—and at that time there were no instruments, you might say, for the performance of this operation, and we had to devise ways and means to perform it. We did not know much about the packing with the gauze, and we had the patient bleed frightfully the day following the operation and we tried ice and everything known at that time; packed it then with cotton. Did not know anything about gauze. Dr. Rhodes, just from Vienna, showed us a packing something like this, and we packed a man's nose, and it was successful. We make these packs and keep 100 of them ready in a jar already sterilized, and no delay is necessary. We were then prepared to control these hemorrhages. Had no adrenalin. We used 20 per cent cocain, and we now find five per cent will produce anaesthesia. We use the Kramer speculum, Pollitzer ear forceps for packing cotton in the nose. The most important instrument is the Holmes nasal saw. It has a ball on the end of it, which I object to because sometimes on account of this you may have difficulty in withdrawing it. If the ball were not there you could pull it right out. We also use the old-fash-

ioned angular packing forceps. With reference to the adrenalin, we do not pack it in with the cotton. If you put it in the nose and conceal it there, you cannot tell what it is doing, and when you take everything out you are apt to find you have too much effect with the adrenalin, and when you come to operate you cannot tell how much to take. I allow the cocain to remain seven minutes and then take 1-5,000 adrenalin solution, and swab out the nasal cavities and watch the effect while preparing to operate. In cases of obstructed nasal respiration the operation is done to enlarge the lumen of the nose. I have always found the finger-like projections Dr. Stillson mentions. I have found the posterior end hypertrophied—looks like a miniature bunch of grapes. I leave the front almost entirely alone, and get all I can of the back; saw my way out and pass the scissors in and clip the rest off; it takes one minute to perform the operation. It is bloodless and painless in this way.

In regard to the packing would say that Dr. Goldstein's technique takes care of this nicely, and I endorse it, except the use of naseline. Of course, if there is any blood it would simply roll over the packing, and I should think the dry packing of gauze would be very much better; it swells when it gets wet; vaseline would have a tendency to prevent the absorption.

Dr. Reynolds, Louisville:—The plain, simple method described by Dr. Murphy, and the technique of Dr. Goldstein, may be applied in cases where no deformity exists except a narrowing of the passages. But in those cases where there are extensive deformities of the septum, where synechia exist between the turbinates and the septum, where there is great curvature of the septum on the obstructed side, and where infection has already been set up in the sinuses, even, difficulties begin to present themselves. The simple cases do not need to be further illustrated, perhaps. I am pleased to know that Dr. Holmes' saw is at least narrow. Were it one-fourth thinner in substance it would be better. I have tried a great variety of saws to go around the curves, and get in the middle an inferior turbinated to remove a sufficient part to allow a permanent opening, and to facilitate drainage, and being an angler, I have split shot in my possession, and I have drilled a hole in this and tied a silk thread in and pressed it with the forceps, and so enabled me to force hard enough to force the necessary curvature, and having got in in that way, it is an easy matter to work the split shot off. If it does not come away, I poke up through the patient's mouth

and push it off. But, holding to the silk string, I hold on to the shot.

I take the cotton roll as Murphy described and roll it on a piece of copper wire and dip in adrenalin solution and pack, and by the time the packing has been complete, and you get ready to put the cocain packing in you may then take out the other and follow with the cocain packing. In regard to the amount to take from the turbinate, I take just enough to cure. It sometimes means the whole bone, and sometimes only a narrow strip along the edge. As to the packing after the operation, I use the gauze. First spread it out and roll cotton in it, then drop the adrenalin solution on it until thoroughly saturated; then take the angular forceps and place it along the posterior part, and raise it as far as possible with a probe. I have operated without the loss of more than two or three drops of blood, and sometimes removed the packing in 24 hours, sometimes 48, and in many instances have had actually no hemorrhage at all. I object to the use of oils and ointments in packing material. I am satisfied they prevent absorption.

Dr. Pynchon, Chicago:—I am in accord with the teachings of the papers, and also with the remarks made. It has occurred to me of late years that the character of my patients has changed, as I formerly cauterized the inferior turbinate, and lately I rarely cauterize the inferior turbinate. The surgical is undoubtedly the best way to take them when they are enlarged or obstruct the nostril. The method of operating on the inferior turbinate seems to me to possess some little difficulties. The way Dr. Murphy shows it on the specimen, where the nose was sawed off in the middle, it was easy to get in as he wanted, but I have looked into a great many noses, and I acknowledge I have had difficulty in using this little saw. But I will experiment more, and maybe by using this saw with a straight handle, I may succeed better. This operation, as has been described, is for noses where there is a reasonable amount of space between the turbinal and the septum; but once in a while we find a case where the inferior turbinal is very large. It is necessary to make a more aggressive attack. I am not pleased with the principle of removing too much of the inferior turbinal. Harris, in the New York Medical Journal, about two years ago, reported the complete removal of the turbinal with fine results. We are bound to have more operating of this kind to do when we come to the middle turbinal. In a good many cases of hypertrophy of the middle turbinal it is perfectly easy to introduce shears and re-

move the narrow end, as Dr. Holmes says, but once in a while we find a case where it is so tight against the septum that it is impossible to do so. I advise the use of the trephine. A round hole is made the size of the trephine, which permits the introduction of one blade of the shears, and the other blade has been introduced below the middle turbinal; in that way the entire end can be cut back as far as the hole goes, that is made by the trephine. After that introduce a cold snare, and cut off a good sized piece. Secondary contraction takes place, so that very nice results are obtained, and even afterwards, a person might be in doubt as to whether any operation had been done at all. The object is to improve the ventilation and drainage of the nose, and removing it in that way allows the air to go to the attic, which is so essential for the ventilation and drainage of the sinus. After treatment: I have packed in some cases, but not as much as I should. I would use the high carbolized douche. If there is anything in treatment after operations that I am thoroughly appreciative of it is the use of the hot douche after any operation which involves the cartilage or the bone in the nose. The hemorrhage and everything of that kind is reduced.

Dr. Goldstein:—At one of the earliest meeting of this society five or six years ago, I was inclined to take a conservative stand about nasal operations, and while I am as ready to be radical as any of you when occasion demands, I think we do too much operating. There seems to be a general enthusiastic spirit just now as the result of Dr. Murphy's excellent description of Dr. Holmes' operation, but I think you will find a great many of these conditions must be modified without quite so much enthusiastic and radical surgery. There is a time to operate, and there is a time to introduce therapeutics, which is quite as satisfactory and less of a nervous wear and tear on your patient and less of a risk. I fail to understand how these gentlemen who have operated so frequently in this particular form of trouble get along so well with so little hemorrhage. I have had much of it in my own work, and have seen it in the work of others.

Why such practical men as Dr. Reynolds and Dr. Vail fail to appreciate the necessity of looking after the post-operative condition as indicated in my paper is not clear to me. Why such a thing as an oily medication, which we use everywhere else as an admirable therapeutic agent, should fail to respond equally as well in the mucosa of the nose, I fail to understand. I believe you will

find that a plug saturated with antiseptic petroleum oil will stop hemorrhage quicker than a dry plug every time. I believe the method advocated originally by Pierce and modified recently by myself, will answer for most of the mild cases where the bone has not yet been involved, and I do not believe we are ready at present for radical surgery in the nose to the exclusion of all other treatment.

Dr. Hollinger, Chicago:—The modifications of these operations are these: You find little osteophytes protruding into these swellings. (Drawing.) You first cauterize down to the bone and then you put the snare around it, and it simply depends on you if you make the loop large enough, and you cut off all this part quite easy. In closing the snare you will get a little of the bone. If you simply lower the tip of your snare a little bit, the loop simply slips along this curve, and you get everything down to the bone quite close.

Dr. Kyle, Indianapolis:—I am not in favor of the gauze packing dipped in oil. The preparation I usually use, is dipping the gauze packing in a solution of alboline, 2 per cent, and menthol, then squeezing the gauze and inserting it into the nose in layers. I believe the menthol stimulates healing, and is a slight antiseptic. The other day I was talking with a genito-urinary specialist, and he suggested this, in certain cases of hypertrophy of the turbinate. He takes a tube this shape for inserting into the urethra for the cauterization of enlarged prostate gland, then takes the cautery point, and at this end has an arrangement whereby he can turn the cautery point at right angles. In hypertrophies of the posterior part of the lower turbinate, in certain cases, you can insert the canula and pass this cautery point along, turn it at right angles and push it into the enlarged tissue. I think in certain cases the idea suggested there might be of great value.

Dr. Stillson, Indianapolis:—There was one point I wanted to speak about, and that is the effect of these operations upon tinnitus. That has not been brought out. I have seen some very nice results follow these operations, in a number of which I have seen what seemed to me almost remarkable effects upon the tinnitus. My idea is that in some forms it is due to interference with the venous circulation. I believe that the antiseptic surgical operation is better than the cautery for the reason that in the former you get the redundant tissue removed, and it is not followed by congestion,

and in that way the circulation is restored to normal, and the tinnitus improved.

Dr. Todd, Minneapolis:—I heard Dr. Holmes read his report of 1,500 cases three years ago. His paper was on just such cases as Dr. Stillson has mentioned, pertaining to ear troubles. I think it is a mistake for the members to assume that the operation is a panacea for all nasal troubles, and I do not think the report indicated such a claim. I will tell of one case where this method gave me benefit where cauterization and removal of a part did not.

Patient could not hear ordinary conversation at any distance. After cauterization only temporary improvement in hearing. This occurred just after the Columbus meeting, and he went through this operation, and can now hear ordinary conversation at about 15 feet.

Dr. Jos. Beck, Chicago:—With regard to the pathology of this affection of posterior enlargements, I have examined a number of them histologically, and it would prove some facts about the bleeding of the parts. The main part of these enlargements undergoes degeneration. Cauterization of this part will affect it but slightly, unless you destroy it. Punctures are certainly of no avail, and you have to remove it in toto if you want good results. The German doctors are very cautious of this bleeding from the posterior turbinate, and by the way, it is said there is but little bleeding, but there must be, as a rule, considerable, and in my experience I have had this bleeding in removing these parts.

In regard to Dr. Pierce's operation as modified by Dr. Goldstein, I have used it during this year, and I report it to be not as well done by the aid of this instrument. I could take the probe after making the puncture, and it would bend around the irregularity of the turbinate. You can force the probe by this and get a deeper cauterization. The result is not lasting. There is a little relief for two or three weeks, and then it swells up again.

Dr. Goldstein (closing discussion):—The question of my modification of Dr. Pierce's method has been touched upon. I follow Dr. Holmes' principle in getting a certain amount of bone scar, because by that you get the best possible binding of the tissues and the bone, and get the best nasal lumen. I still make the cauterization with the probe and canula, and find it successful. I do not think sub-mucus cauterization is valuable where the pathological process has gone on to such an extent that the bone as well as the soft tissues overlying it is touched. In the so-called soft hy-

pertrophies the submucous cauterization is a simple form, and I believe you will obtain a lasting result with it.

Dr. Murphy (closing discussion):—I agree with Dr. Goldstein's method of treatment after the operation, and I follow the method he has suggested very largely in these operations. Each operative success in the end depends upon asepsis. Out of the 263 operations I have performed in this region I have never had a case of tonsillitis or sepsis following the operation, and I do not believe it is entirely due to luck, but to the suggestions as outlined by Dr. Goldstein of thoroughly looking to the after-treatment. They should be cleaned every day, twice a day. The patient is frequently able to attend to this himself, using some antiseptic powder after first spraying with an oily solution containing menthol and petroleum oils, and then with aristol I have had very good success.

I said in the start, I could not take up all the indications for this operation, but only desired to place the technique before you. When you understand that, you will draw your own conclusions as to when to operate. One of the indications is tubal trouble, and I reply to Dr. Stillson's remark about tinnitus that this operation has given me very good results in these cases. I do not believe you will cure your tinnitus until you remove these obstructions. If you will call to mind Dr. Holmes' illustration yesterday as to the circulation of the inner ear you will comprehend why the removal of these posterior hypertrophies relieves the tinnitus. Another indication is respiration. Where the nasal passages are not being properly used for the warmth and moisture, we operate for it. In regard to the packing, where we operate in the office and send the patient home, use the packing, but in the private hospital where the patient can be put to bed and watched, and kept quiet, the packing can be dispensed with with safety. I have never had a case of serious hemorrhage following this operation. These patients must be kept quiet. They are put to bed and kept quiet 24 hours, when the danger of hemorrhage must be lessened. I have not experienced difficulty in getting this saw in the nose. I have this width made to start with, and they are sharpened after each operation. I always have two sizes, a very thin one and one this size. The probe point is not necessary.

The Hypertrophied Faucial Tonsil: With Report of the Morbid Histology of the So-called Submerged Tonsil. Dr. E. O. Sisson. (This paper will appear in extensio in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

Dr. Pynchon, Chicago (opening discussion):—Some of the gentlemen who have passed opinion on this operation have criticized it on account of removing a portion of the anterior pillar. I have found no disadvantage whatever from removing the rear half of the anterior pillar, which is larger than it should be in these cases of hypertrophy. As regards the submerged tonsil, one feature not touched on is that frequently tonsils of this class contain sites which are filled with detritus containing pus. These sites are sometimes quite large, sometimes the size of a pea, and when the fold is being compressed it will fly out with force—once with such force that the patient felt it hit the other side of the throat, from the pressure of the electrode. It takes about 20 minutes for the operation. The electrode at a white heat, if allowed to be in the open air very long simply fuses. It should be at a white heat for the operation. It is hard to heat it beyond a dull red. There are a great many cases of quite lively hemorrhage which are never reported Patients have reported quite profuse hemorrhage in several cases. I have tried to ascertain where and why this hemorrhage occurred. I have found that hemorrhages are more liable to occur in men than in women, and that there has been kidney disease with an atheromatous condition of the vessels. Secondary hemorrhage will occur in twelve hours if at all; never have known of any beyond that. The dangerous hemorrhage is apt to occur at the time of the operation.

Dr. Jos. Beck, Chicago:—I want to answer Dr. Pynchon that I have made sections and microscopic examinations frequently, and I have found two things: (Illustrates.) He did not speak of finding muscular structure, which is there if the tonsil is removed with the anterior pillar. You will find the usual pillar structure at one end, and at one point fibres of muscle connecting the anterior pillar. It is of decidedly muscular structure. Almost all surgeons keep this structure there, and if it is of any value a little more or a little less will not make much difference. He removes it as far as the red line that he takes as his mark, and if I understand it right he dissects that off. The pillar has a function in deglutitation, and also in vocalization. It changes the voice to remove the pillar, you will find that in congenital malformations.

The second is the complete removal of the tonsil by cautery dissection. The physiology is not clear, but the pathology shows that if you remove it other members must take on the function. I

believe the removal of the entire tonsil is injurious. Remove all that is pathological. If you remove the pillar close to the lower part you are likely to have hemorrhage, which is serious. But if you allow that part to remain there is a certain contractility.

Dr. Kyle, Indianapolis:—I believe that Dr. Pynchon would get fully as good result with removal of half of the tonsil as with removal of the whole tonsil. (Illustrates.) The anterior pillar has deteriorated from successive inflammatory conditions, and we have little holes which are perfect little culture tubes, as it were. It sets up an inflammation which extends into the tonsil proper. Secondly, if you take your cautery instrument and tenaculum pointing forward over the tonsil, you will have remaining that portion of the tonsil that will carry on the physiological function, and I believe it will be as satisfactory as to dissect out the whole.

Dr. Andrews, Chicago:—There is no necessity for removal of the entire pillar. It can be loosened from the tonsil and the tonsil removed very easily. I believe that the tonsil, whether submerged or not, should be caught by the tenaculum forceps and drawn out and cut off with some kind of tonsillotome. I feel it would be hard to convince me there is a better way.

Dr. Brown, Milwaukee:—In curing clefts of the soft palate we cut the major potion of the muscle from the anterior pillar, and any one will recognize that the muscle very quickly adjusts itself to the new conditions.

Dr. Goldstein:—I am sorry to know that the discussion of the removal of any part of the anterior pillar is under discussion at all. I do not know that I have ever seen a case where even the thickening of the muscular tissue has been sufficient to interfere with any of the functions of that part of the pharynx, and no matter how much dissection should be done, the anterior pillar should be left alone. Another point to be emphasized and barely referred to by Dr. Beck, is the unfavorable influence that the interference with any of the tissues of the anterior pillar might have on the plane of the larynx, when cicatrization takes place. I believe the point is rational, and should be considered in interfering surgically with the tonsillar area.

Dr. Todd, Minneapolis:—In regard to hemorrhage, my experience has been, as Dr. Pynchon says, that they usually occur within 12 hours, and when they get to the point that they are extremely weak they stop. But in one case of a child five years of age, the secondary hemorrhage occurred on the second and fifth days after

operation. They were the most violent hemorrhages I have ever seen, extending over several days.

Dr. Vail, Cincinnati:—I have done a good deal of tonsil work and have observed the submerged tonsil. In regard to the galvanic cautery, I said three years ago I would never use it in a tonsil again. I inserted it in some of these crypts at white heat. The patient suffered no pain, but was not able to swallow even water; had to go to bed and had hypodermics, and I supposed it was excessive nervousness on the part of the patient.

A young man came in to let me operate on his tonsils, and wanted to go camping in ten days. I used the galvanic cautery in his throat with the same result, and these patients promptly left me. I have been very careful in avoiding the crypts now in burning the tonsil. If there is a large amount of hypertrophy, and the patient objects to a bloody operation, I burn the tonsil on the surface with the electrode and take them off layer after layer. I prefer to do it in several sittings. There is no reaction. In regard to dissecting the tonsil out with the cautery or using it in any way in the throat, it is unclean surgery, it produces a necrotic slough; there is a certain systemic reaction, which is partly due to the absorption of germs. When a case bleeds after the first day it indicates there has been sepsis. There is less bleeding where there is no sepsis.

Dr. Robertson, Chicago:—(Referring to Dr. Vail's drawing.) As I understand this, this is part of the tonsil, and not the secondary tonsil. In nearly all the cases we can take off this part; the part that lies beneath is the part that does the damage. This (illustrating) is the one that originates most of the abscess cases. In order to remove this part of the tonsil I have devised a special scissors. The crypts of the supernumary fossa are the ones that make the trouble. The ones that open down in swallowing. If you will take a probe you can pass it over the tonsil and these crypts are usually full, and no matter if you take the whole tonsil you still have enough effete matter there to set up inflammation. Unless you take out all of the tonsil, and all of the inner surface of this cavity, you will get unsatisfactory results.

Dr. Reynolds, Louisville:—The tonsil is a complex form of superficial lymphatic gland. When inflammation of the surface has taken place, and the two pillars become adhered with the upper part of the tonsil the so-called submerged tonsil becomes a constricted mass of lymphatic gland retaining the flow which should

circulate through it. I do not think any tonsil which has not been completely destroyed in its function should be removed. It interferes with deglutition.

Dr. Murphy, Cincinnati:—I have had considerable experience with this, and I secured a set of Dr. Pynchon's cautery points, and made several attempts at removing the submerged tonsil; possibly due to lack of experience, it was painful to the patient and trying to myself. The reaction was considerable, so I let the patient go that day, but as soon as that healed I went back to my old method, which was described by Dr. Andrews. I find no better method than the tonsillotome. If you place it well in position and have a good strong tenaculum, you will be surprised at the amount that can be removed in this manner. Never had hemorrhage until about a year ago in a man about 25 years of age with large, fibrous tonsils. I removed them by the ordinary method. A severe hemorrhage followed in the right tonsil.

Dr. Pynchon, Chicago:—About this line of redness; when the tonsil is diseased that line of redness is a very clear line of discoloration betwe:n the redness of the mucous membrane and the pillar beyond it. As regards the effect on the voice, I have never had any effect except favorable. It increases the high register two or three notes. By removing the diseased tonsil which keeps the posterior pillar from advancing, and permit the soft palate to come forward and there is an increased volume of air. In regard to the soreness, it is probably due to the amount of chronic inflammation in the tonsil before operation.

Dr. Sisson, closing discussion:—I would say to Dr. Beck that in the large number of sections I have made I have found very little muscular tissue. I cannot see that any harm would result from the removal of a small piece. With regard to the electrocautery point in the puncture, I suggested that it be put between not in the crypts, unless it is passed to the bottom of the crypt.

(*To be Continued.*)

LARYNGOLOGICAL SOCIETY OF LONDON.

Seventy-fourth Ordinary Meeting.

(*Continued from page 640.*)

Case of Excrescences or Incrustations or Chalky Deposits low down in the Trachea.

Shown by Dr. Edward Law. The patient, a lady aet. 36, came under observation three days ago.

She had first noticed nose trouble as a child with an occasional disagreeable odor from the nostrils. She had employed various nasal solutions with a syringe or douche, but gave those methods up some years ago on account of the discomfort which they caused at the back of the nose and throat. For some years she has sniffed the nasal solution through the nose. Formerly the voice was very husky and hoarse, but not recently. She now complained of a constant short, hacking cough, loss of smell, indifferent taste, and a slight discharge from the nostrils. There was no history of a foreign body, no dyspnea nor expectoration, and the general health was satisfactory. On examination no atrophic changes were found in the nose, pharynx, or larynx, and nothing abnormal beyond some little catarrhal trouble and a small crust in the neighborhood of Luschka's tonsil, thus verifying her doctor's statement that she had to a great extent recovered from the ozenic trouble. Low down in the trachea a number of papillomatous excrescences, or crust-like or cretaceous deposits, were seen, a large one with ragged edges on the right side, and a number of smaller ones dotted in an annular or crescentic arrangement around the trachea.

The diagnosis was, in Dr. Law's opinion, very uncertain. He had thought of papillomatous excrescences, ozenic incrustations, herpetic crusts, keratosis, ulcer, enchondromata, chalky deposits.

Dr. Lack suggested that the growths in the trachea might really be crusts, a view also expressed by other members. The fact that the appearances had not changed in twenty-four hours, in his opinion, in no way militated against this view. They might remain stationary for a week. He suggested that Dr. Law might clear up the diagnosis as to this important point by syringing or spraying the trachea.

Sir Felix Semon added his own opinion to the same effect. What induced him to take this view was the co-existence of crusts in the naso-pharynx and (what could not be seen well with the light at their disposal in the adjoining room, but could very well with an oxygen light) the greenish color of the little protrusions in the trachea, which was quite different from anything with which he was acquainted, either of tracheal excrescences or of a papillomatous nature. As to remaining stationary for twenty-four hours or a week, he would like to mention a little experience of his own. When in statu pupillari he observed on a certain occasion an extraordinary (as he thought) excrescence on the right vocal cord of a patient in the Throat Hospital which he could not account for, and so after having it under observation for about a week, he took the patient to Sir Morell Mackenzie, and asked his opinion about the extraordinary growth. Sir Morell Mackenzie, after examining it for a moment, took a dry laryngeal brush, introduced it into the patient's larynx, and having withdrawn it, invited him (the speaker) to look again. He looked, and there was no growth to be seen.

Dr. Law:—With reference to the diagnosis, he was sorry it was still a matter of doubt, as the patient came from South Africa, and was leaving London the following day. Having carefully examined the condition, he was somewhat opposed to the diagnosis of ozenic crusts. At first the impression made upon him—and he did not at first see the excrescence or deposit with ragged edges on the right side, but only the somewhat annular arrangement of a number of the projections which were whitish in color—was that they were a sort of chalky deposits. Afterwards he thought of papillomatous excrescences, of keratosis, of a possible herpetic condition, of ozenic crusts, of an ulcer. But he considered the diagnosis very doubtful. Dr. Thomson had suggested there might be a breach of surface due to an ulcer; he would point out there was some tenderness over the affected part of the trachea.

Case of Removal of Epiglottis for Tuberculous Disease.

Shown by Mr. R. Lake. The patient, a man aet. 30; he was working in a laboratory when the next man, in performing some experiment, produced a very thick cloud of nitrous vapor which irritated the patient's throat. A few days later, as he was suffering with dysphagia, he consulted Dr. Bennett, who diagnosed laryngeal tuberculosis, and found slight crepitations in one apex. The

stump is quite healed and healthy, but the arytenoid regions are still slightly swollen. His lungs now are apparently healthy.

Tuberculous Perichondritis; Case shown at the Society's Meeting, February 7th, 1902.

Shown by Mr. R. Lake. In this case the larynx had been exposed by a large flap incision on March 8th, and on incising the perichondrium a yellowish-white semi-transparent mass was found separating the perichondrium from the cartilage; it was roughly 3-16 of an inch in thickness. This was carefully removed, and a small spot of disease was found in the mid-line of the cartilage, which was cleared out. Mr. Lake said, had it not been for the advice of his colleague, Mr. F. Spicer, he would have excised the larynx, but he was glad he did not, the man being in good health and working at his trade, that of a baker. The mass removed was an organized product of inflammation, and was full of giant-cells, with bacilli in most of them.

Case of Geographical Tongue.

Shown by Dr. Pegler. This patient was a boy aet. 4, and he had been subject to "wandering patches" on the tongue since birth. They were more or less circular, and varied in size from a quarter of an inch to an inch in diameter. At present they were fewer and less marked than usual; they often disappear altogether for a few days, and then a fresh set succeeded them. The centre of each patch was red and raw-looking, the edges raised, reddish yellow towards the center, and white at the periphery.

Case of Syphilitic Necrosis of Intra-Nasal Structures, exposing to View the Opening of the Sphenoidal Sinus on each side, and of the Posterior Ethmoidal on the left.

Shown by Mr. Hunter Tod. The patient was an old woman, who came to the London Hospital Out-patients, complaining of headaches and dimness of sight. The nose was filled with crusts, removal of which showed present condition. The eyes were reported by the ophthalmic surgeon to be normal.

Dr. StClair Thomson said that no doubt the opening led into the sphenoidal sinus, but he thought it was quite open to question whether they were the natural ostia sphenoidalia.

Dr. Hill said that he had measured the distance of these ostia from the vestibule in this case, which was not more than 2½ inches, and he thought that was one inch anterior to the real sphenoidal openings and lower down.

Dr. Watson Williams took the same view of this case as Dr. Hill, and did not think that these were openings into the sphenoidal sinuses. Without measuring it was, of course, difficult to judge distances, but it certainly seemed to him that they were too far forward, and he thought that there was no doubt that the syphilitic changes, which evidently had been very pronounced indeed, occurring in the posterior portion of the nasal passages, would be quite enough to distort the posterior ethmoidal cells and to produce the conditions in this case.

Mr. Tod, in reply, said he certainly thought that they are sphenoidal sinus openings, as they were very symmetrical and so central.

Cystic Adenoma of Pyramidal Lobe of the Thyroid.

Shown by Mr. Waggett. This occurred in a woman aet. 43, who first noticed a lump in the neck six years ago. A fortnight ago it had become painful, and increased to double its former size. At the present time a firm tumor, the size and shape of a bantam's egg, occupied the subhyoid region of the neck a little to the left of the middle line. Evidently a hemorrhage had occurred in a cyst.

Dr. Grant considered this a cyst connected with the thyro-lingual duct.

Mr. Waggett said he thought Dr. Grant and himself merely differed on the question of terms. The pyramid lobe of the thyroid gland was the lower part of what was called the thyro-lingual duct.

THE GREAT MASTER IN MEDICINE,
RUDOLF VIRCHOW, HAS PASSED AWAY.
WE ALL RESPECTFULLY PAY OUR TRIBUTE AND
TRULY MOURN HIS LOSS.

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It is our purpose to furnish in this Department a complete and reliable record of the world's current literature of Rhinology, Laryngology and Otology.

All papers marked (*) will be published in abstract in THE LARYNGOSCOPE.

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SELECTED ABSTRACTS.

The Pathological Anatomy of the Hypertrophied Lower Turbinate. —Dr. S. Citelli (Assist der Klinik).—*Archiv, fur Laryngol.*, Band 13 Heft I.

The material for this study was obtained from Gradenigo's clinic, and consisted of a large number of turbinals removed on account of the disease in question.

A short review of the histology of the normal mucosa is given, and then the alterations in the various structures are noted.

The hypertrophies are divided into (1) the diffused, (2) the papillary, and (3) the polypoid forms.

1. Diffused hypertrophy. This is the most frequent form. The mucosa is red. It is thickened throughout and is firmer than normal. On the surface may be seen here and there deep furrows, which bound irregular formed, rather flat areas. In these furrows are situated the openings of the glands.

2. Papillary hypertrophy. Here the furrows are more numerous and cross each other in every conceivable direction. The folds and ridges which in the preceding form were not very prominent, are here cut through by the furrows and present a conical or warty appearance. The mucosa has a granular papillary character, hence the name papillary hypertrophy. As a rule the color is more or less red. In some cases, however, the mucosa has an opaque, grayish color resulting from maceration of the superficial layers of epithelium in the stagnating nasal secretion.

3. Polypoid hypertrophy. Here the papillae are more pronounced, so that they present the appearance of small polypi. During life these papillae have a reddish translucent appearance. This form of hypertrophy is generally found at the extremities of the lower turbinal.

MICROSCOPIC APPEARANCE.

1. Diffused hypertrophy. Here the pathological changes seem to form two types: (1) a form of pathological change consisting of a hyperplasia of all the tissues constituting the mucosa, and (2)

when the changes are mainly restricted to the blood vessels and their immediate neighborhood. The first may be called the fibro-angio-edematous type, the second the vascular type.

1. The fibro-angio-edematous type.

The epithelium is here and there hyperplastic and leucocytes abound. The basal membrane is more in evidence than in the normal. In the superficial epithelial layers there is a profuse round-cell infiltration, more marked in the neighborhood of the vessels and the acinous glands. Occasionally there is a true lymph follicle, usually at the ends of the turbinal. The connective tissue is thickened, and has a reticulated appearance with a few fixed elongated cells. Numerous vessels, mostly capillaries, are present. In this layer the glands are more numerous than usual and consist of small acini.

In the deeper layers of the corium the blood spaces are enlarged and their walls thickened. The glands are large and show here and there slight expansions. The small cell infiltration may reach this region, but it is usually confined to the superficial layers. The connective tissue is hyperplastic and becomes continuous with the periosteum. The latter structure shows little change. The bony lamellae also vary little from the normal.

2. Vascular hypertrophy. The epithelium very slightly hyperplastic, the basal membrane slightly thickened. In the upper layers of the corium there is an infiltration of leucocytes, in the stroma that consists of loose connective tissue many little acinous glands are found, and the blood spaces with thickened walls may extend almost to the basement membrane. In the deeper layers of the corium the change consists mostly of enlargement of the blood spaces with markedly thickened walls. This thickening depends on a hyperplasia of the muscular fibres.

In some places the walls project into the blood spaces in the form of small polyps, and present a picture of a sort of intravascular myofibroma. The blood spaces are separated by a thick connective tissue which is the seat of an infiltration of leucocytes. The periosteum, the lamellae and the medulla are normal. The arteries of the latter are, however, much thickened, the membrana elastica being folded and at certain points very prominent. The arteries of the mucosa show the signs of a peri- and endarteritis.

2. Papillary hypertrophy. Here the changes involve all the structures composing the mucosa, but the characteristic change is the hyperplasia of the superficial layers. As stated above, this type

is characterized by the formation of papillae. Naturally, therefore, the microscopical changes will correspond with this, and the most marked hyperplasia will be found in the superficial layers. In some cases one can distinguish 8-10 layers of cells in the depressions between the papillae.

The widened canals of the glands open mostly in the interpapillary irregularities of the derma. It is thickened and occasionally sends off from its under side fibres which become merged with the upper layers of the derma.

Corium. The papillae consist of a stroma of loose connective tissue containing few fixed but many wandering cells and numerous capillaries. We also meet with reticular connective tissue with many leucocytes and small blood vessels. Here and there are the efferent ducts of glands, which are often dilated. Somewhat deeper lie acinous glands and blood spaces surrounded by a small cell infiltration.

The deep layer of the corium consists of hyperplastic glandular tissue which shows irregular dilatation, also of cavernous bodies which likewise are dilated and of a connective tissue rich in elastic fibres. The infiltration of leucocytes sometimes extends to this layer and even to the periosteum. Beneath this the connective tissue merges into the periosteum and the cell layer is rich in osteoblasts

3. Polypoid hypertrophy. In this type the same changes may be seen which characterized the type just described, except that here they are present in more pronounced form. The most prominent changes are to be noticed in the upper layer of the corium, where not only papillae but true polypoid elevations are formed. Both polypoid elevations and the interpapillary depressions are covered with a basement membrane and epithelial layer which (aside from the presence of numerous leucocytes) may be considered normal. Underneath the basement membrane is a rich infiltration of small cells, and here and there hyaline bodies either isolated or grouped in mulberry form.

In the polypoid elevations, capillaries are seen lying in the midst of a loose connective tissue. A characteristic of this type of hyper, trophy is, that in the upper layers of connective tissue numerous cyst-like spaces are found. These are apparently not retention cysts. It is more probable that they result from a collection of fluid in the meshes of the connective tissue, and as the amount of fluid is increased the pressure becomes so great that the connective

tissue gives way, and a space is thus formed which assumes the character of a cyst.

These cysts often have no proper walls. The surrounding connective tissue forms a sort of wall. The fluid differs in no respect from those which are provided with a capsule. Few leucocytes are present, but very many are to be seen in the connective tissue immediately surrounding the cyst-like space. By confluence or by steady increase of fluid these cysts attain a large size, so that only few are needed to fill out the entire polypoid excrescence. One sees all stages, from the simple vacuoles in the connective tissue, to the large encapsulated cysts. The upper layers of the corium are also composed of a reticulum containing fixed cells with an elongated nucleus and little protoplasm. There is also frequently seen an irregular cell formation of a myxomatous appearance. In the meshes of the reticulum among the numerous capillaries are found an abundance of leucocytes. The deeper layers of the corium show evidences of hyperplasia, but in much slighter degree.

Alterations in the bone. These may be present in all three types of hypertrophy, but are more frequent in the degenerative hypertrophies. Two forms were observed, an ossifying osteoperiostitis, and a rarifying osteitis.

In the first form there is a small cell infiltration of the germinal layer of the periosteum. In this certain cells may be distinguished by their cyst-like nucleus. They are osteoblasts which are more numerous and richer in protopalsm than is normal, and lead to the formation of bony layers which are added to and thicken the turbinal bone.

The rarifying osteitis, on the other hand, is characterized by the presence of numerous osteoclasts which lie in peculiar cavities (Howship's lacunae), and by the progressive thinning of the lamellae.

Where the osteoblasts are numerous and crowded together, the bone appears rough and eroded. The lamellae become even thinner and the medullary cavities expand. Wherever either ossifying osteoperiostitis or rarifying osteitis exists, there is also present an inflammation of the overlying mucosa. The bone disease cannot therefore be regarded as primary, but as an example of an inflammatory process from the surface into the deeper structures.

VITTUM.

The Application of Paraffine Preparations in Deformities of the Nose.—DELIE.—*Revue Heb. de Laryng. D'Otol. et de Rhinologie*, May 31, 1902.

A mixture of one part of solid paraffine and of four parts of liquid paraffine is the ordinary (American) vaseline whose melting point is between 38° and 40° centigrades.

Four parts of solid paraffine and six parts of liquid paraffine give a product fusible at 44°.

Five parts of solid paraffine and five parts of liquid paraffine give a product fusible at 48°.

Six parts of solid paraffine and four parts of liquid paraffine give a product fusible at 50°.

Eight parts of solid paraffine and two parts of liquid paraffine give a product fusible at 56°.

Each of these preparations is made by boiling in a water bath and preserved in a jar hermetically sealed.

The author concludes that the injection of paraffine is of valuable aid in destructive diseases, both of the internal and external parts of the nose. The choice of the quality of the paraffine must be decided by the condition of the skin and mucous membrane and by the effect obtained.

In nasal pothesis, the immediate results obtained by the injection of paraffine at a low fusible point are as satisfactory as of the more solid forms. Neuman, of Vienna, however, claims that the injections of ordinary vaseline are always transient, and that at the end of a year or two, the nose returns to its former condition. The future alone can decide this point, and thus decides us in the selection of this most practicable form for the injections.

SCHEPPEGRELL.

Perforation of the Nasal Septum.—J. M. BROWN.—*Medical Standard*, May, 1902.

The author reviews the variety of causes of perforation of the nasal septum, in which he quotes authorities claiming occupation as the most frequent cause. It is said that 61 per cent of the workmen in a factory of copper-arsenic green have perforations. Again under idiopathic causes he mentions climate, as for instance the climate of the middle west, as a most common cause.

STEIN.

Hay Fever and Other Forms of Nervous Coryza.—DR. EMMANUEL FINK, (Hamburg).—*Haug's Vortrage, Band V, Heft 6.*

This monograph of 62 pages gives a general review of the history of the disease, a review of the prevailing methods of treatment, and a new procedure advocated by the author.

Fink is of the opinion that the seat of the trouble is the mucous lining of the auxilliary sinuses, and more particularly that of the maxillary sinus. His view of the pathology is that there is present an unusual irritation of the branches of the trigeminus, and that the hypersecretion is a result of irritation of the secretory fibres of that nerve.

His suggestion is that Aristol be blown through a fine tube into the maxillary antrum through the fenestrum ovale. He admits that considerable skill will be required thus to administer the remedy through the natural opening, and that one must keep on hand a supply of tubes with different curvatures.

VITTUM.

A Contribution to the Pathological Anatomy of the Faucial Tonsil.—DR. HANS RITTER (Bad Salzbrum in Schlesien).—*Archiv. fur Laryngologie,* Band III, Heft 1.

The studies were made from tonsils removed in toto from the cadaver. A large number were examined in order to determine the nature of intratonsillar abscesses. The author agrees with Finder that all abscesses so situated must be regarded as retention cysts. No communication exists between the cavity and the surface. No pyogenic membrane was demonstrable. Whenever these cysts increased in size until they pressed upon and broke into the peritonsillar connective tissue all the acute symptoms of peritonsillar abscess were manifested.

VITTUM.

The Diagnosis of Adenoids.—JAMES MOREAU BROWN, *Medical Standard*, March, 1902.

In establishing the diagnosis the author prefers the use of a special diagnostic forceps which is so constructed that there is no danger of wounding the healthy tissue, inasmuch as the solid blade is larger than the cutting blade. The instrument is readily passed into the naso-pharynx, the blades separated, and a small piece of the growth removed for inspection and demonstration.

STEIN.

Bacteriological Diagnosis of Membraneous Inflammation of the Throat by a Simple Method.—FRANCIS CAREY BAYNE (Baltimore).—*Jour. Eye, Ear and Throat Diseases*, May-June, 1902.

A rapid differential diagnosis can be made as follows: Take an egg and boil until hard. Then with sterilized forceps break very gently into the air sac and peel off the shell and membrane immediately beneath it, leaving enough of the same to protect the culture. Make a swab from the throat and gently smear on the surface of the egg under that part of the shell which is left. Then take an ordinary cup and pass through a flame very rapidly several times to sterilize. Place the egg in the cup with the broken end down, and leave by a stove twelve hours. By this method is gotten an almost pure culture of diphtheria bacillus in from eight to twelve hours, this organism growing more rapidly than others usually present.

EATON.

Slight Deafness.—D. S. REYNOLDS.—*Cincinnati Lancet-Clinic*, June, 1902.

The author accepts for his subject of slight deafness, those cases defined by the Board of Referees of the Bureau of Pensions of the United States Government, as hearing ordinary conversation at six feet.

As the conversational tone differs so in different individuals this test can be of but partial value. Because the watch as a test instrument is at times scarcely distinguishable unless brought very near the ear, by individuals with apparently normal acuity of hearing, for ordinary conversational tones, he objects to the value of the tuning fork for the same reason.

STEIN.

Contribution to the Study of the Use of the Rubber Sound in Chronic Catarrhal Affections of the Eustachian Tube and Middle Ear.—URBANO MELZI.—*Archives Internationales de Laryng. D'Otol. Rhinologie*, March-April, 1902, No. 2.

An application of the rubber sound in such cases is not only of diagnostic importance, but also a therapeutic measure which is simple in its application, free of danger, and has given brilliant results. In a number of cases cited by the author, it produced marked benefit in cases in which the usual methods of insufflation and catheterization had been without benefit.

SCHEPPEGRELL.

Intratracheal Injections in Phthisis Pulmonalis.—W. S. ANDERSON, M.D., (Detroit, Mich.)—*Journal Tuberculosis,* July, 1902.

The author desires to indorse this method of medication, which does not in any way interfere with other methods of treatment, and can be employed in addition to such dietetic, climatic and medicinal means as may be best suited for each individual case. His results justify a more extended application of remedies per trachea which, though like other methods, obtained their best results in the first and second stages of cases, but is not without effect in advanced cases. The technique is similar to that of laryngeal applications. The patient should hold his tongue out while the operator introduces the canula of the syringe, guided by the mirror, during a deep inspiration. If the patient inhales gradually, slowly and steadily, the canula can be introduced between the vocal cords, and from one to two drachms injected without inconvenience. The operator should introduce the fluid gradually and steadily, not in spurts, and the whole amount must be introduced before the end of the inspiration, otherwise choking will take place. Only a limited number of drugs are used in this injection, and olive oil the only vehicle. In the majority of cases of injections the formula was liquid guaiacol, 2 per cent, and camphor-menthol (equal parts of camphor and menthol) 5 per cent. This seldom causes irritation, is not unpleasant, and has been most useful of all the formulae. Ichthyol, 2 per cent, with camphol-menthol, 5 per cent, has also been used. It seems to diminish the secretions. It is not as agreeable and usually has not proved as useful as the first formula. Iodoform, 1 to 2 per cent, has been employed, but it does not dissolve in the oil. A little less than 2 per cent can be taken up with the oil. Iodoform, considered valuable in all forms of tuberculous disease, should be specially indicated. The solution should be sterilized, which is easily accomplished by placing the bottle in a hot water bath for forty-five minutes. F. C. E.

Arsenic Iodide in Otology.—HASELTINE.—*The Clinique,* April, 1902.

The author's experience with the use of arsenic iodide leads him to regard the remedy as of great value in tubercular adenitis and in the adenitis seen complicating and accompanying suppurating ear diseases. In the chronic form of catarrhal deafness little or no benefit was seen from its use.

STEIN.

BOOK REVIEWS.

Grayson's Laryngology.—A Treatise on the Diseases of the Throat, Nose and the associated affections of the Ear. By CHARLES P. GRAYSON, M. D., Lecturer on and Instructor in Laryngology, in the Medical Department, University of Pennsylvania. In one octavo volume of 540 pages, with 129 engravings, and 8 colored plates. Cloth, $3.50, net. LEA BROTHERS & CO., Philadelphia and New York, 1902.

We can offer no better criticism of this volume than to quote from the author's own preface. "If this volume shall be found to possess any one feature that will serve both to justify its appearance and to distinguish it from its many admirable predecessors, the author thinks it will be in the section on treatment and in the constant thought he has given to those who wish to know not only *what* to do, but *how* to do it. In many of the recently published works that deal with the diseases of these specialized regions so great a number of remedies will be found, and such a generous variety in the methods of treatment suggested, that they can scarcely fail to prove embarrassing to the younger and less experienced reader. The author has endeavored to eliminate this difficulty of choice by giving under each disease but one plan of treatment."

The association of the ear with the upper respiratory tract has been constantly kept in view and this section of otology is ably included in the volume, making it a good practical working volume for the student and general practitioner, and containing many good suggestions for the specialist.

The illustrations, many of which are taken from the excellent volume of Dr. Cryer, are satisfactorily reproduced, and the topography is exceptionally good.

M. A. G.

Studies of the Internal Anatomy of the Face. By M. H. CRYER, M.D., D.D.S., Professor of Oral Surgery, Department of Dentistry of the University of Pennsylvania. Cloth, 8vo., 176 pp., 143 illustrations. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, 1901.

It was certainly an error of omission that this beautiful anatomical atlas of the Internal Anatomy of the Face has reached our reviewer's table at so late a date.

The very considerable practical work and anatomical dissections along these lines with which the author has been engaged, qualifies him to an unusual degree in the presentation of this subject, and makes of the atlas which he has presented to the profession a valuable reference volume.

It is of as much importance to us to study the atypical anatomical forms, as it is to know the usual landmarks of the accessory sinuses and regions of the facial and cranial bones. This volume should be closely studied, and the excellent anatomical plates carefully observed by every specialist in our field.

M. A. G.